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ABSTRACT

This volume presents reports on the flows of graduates from higher education and on their entry into working life in Germany, Austria, Belgium, and Australia. Each paper is written according to detailed guidelines designed to assemble information from many sources, to reflect the state of the art, and to illustrate a variety of approaches, methodologies and philosophies. The paper on Germany by Manfred Tessaring describes changes in the past two decades, the higher education system in Germany, employment and unemployment, the changing input and output of higher education, graduate transition to employment and concluding thoughts. An appendix contains 11 tables of statistics. The report on Australia by Bruce Williams primarily describes employment prospects for graduates there. The paper on Austria is in two parts. The first, "Developments in Higher Education and the Changing Transition to the Labour Market," was written by Lorenz Lassnigg, Susanne Loudon and Hannes Spreitzer. The second part by Klaus Schedler is titled "Employment and Labour Market Prospects of University Graduates in the Austrian Trade and Industry." The report on Belgium is in French and was written by Andre Bonte. Extensive tables and figures illustrate all the studies. (JB)

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FROM HIGHER EDUCATION TO EMPLOYMENT

VOLUME I: Australia, Austria, Belgium, Germany.

DE L'ENSEIGNEMENT SUPÉRIEUR A L'EMPLOI

VOLUME I : Allemagne, Australie, Autriche, Belgique.

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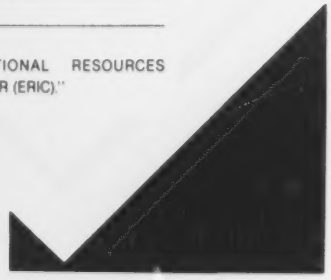

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AVANT-PROPOS

L'OCDE a conduit une activité intitulée "Enseignement supérieur et Emploi", qui comportait trois projets distincts : "Les sorties des enseignements supérieurs et les entrées dans la vie active" ; "Le cas des lettres et des sciences sociales" ; et "Les développements récents de la formation professionnelle continue".

Ce volume relève du premier de ces trois projets. De nombreux pays Membres ont préparé des contributions, à partir d'une note d'orientation détaillée rédigée par le Secrétariat. Ces contributions ont souvent exigé un important effort conceptuel pour rassembler des données d'origines très diverses. Elles reflètent l'état des connaissances dans chaque pays et, en même temps, des approches, des méthodologies et même des philosophies très différentes.

Ce premier volume rassemble les contributions de l'Allemagne, de l'Autriche et de la Belgique ; on y a joint un texte tiré de la contribution de l'Australie au projet sur les lettres et les sciences sociales. Les contributions des autres pays seront présentées dans les volumes suivants.

Il faut noter que ce projet met l'accent sur les flux plutôt que sur les catégories d'établissements ; on appelle "enseignements supérieurs" les formations suivies par ceux qui ont terminé des études secondaires ou de niveau équivalent. Ceci peut ne pas correspondre avec la définition plus restrictive qui en est donnée dans certains pays.

Ce projet a été conduit par Eric Esnault, du Secrétariat. Les idées exprimées par les auteurs n'engagent la responsabilité ni de l'OCDE, ni des autorités nationales intéressées. Ce volume est publié sous la responsabilité du Secrétaire général de l'OCDE.

FOREWORD

The OECD activity on Higher Education and Employment covers three discrete projects: "The flows of graduates from higher education and their entry into working life"; "The case of the humanities and the social sciences"; and "Recent developments in continuing professional education".

This report is devoted to the first of these three projects. Many Member countries submitted contributions in response to detailed guidelines prepared by the Secretariat. These contributions constitute a major conceptual effort to assemble information from many sources. They reflect the state of the art and illustrate a variety of approaches, methodologies and even philosophies.

Presented here are contributions from Germany, Austria and Belgium, together with a text derived from the Australian submission to the project on the humanities and the social sciences. Contributions from other countries will be presented in the succeeding volumes.

It should be noted that the emphasis is on flows rather than institutions. "Higher education" is defined as the education and training experience of those who have completed upper secondary education or its equivalent. This may not coincide with the more restrictive connotation of the term in some countries.

This project was led by Eric Esnault, of the Secretariat. The views expressed by the authors do not commit either the OECD or the national authorities concerned. This volume is published on the responsibility of the OECD Secretary-General.

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ALLEMAGNE

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GERMANY

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I. INTRODUCTION

During the past two decades the relationship between education and employment in Germany has been influenced, as in many other industrialized countries, by three main factors:

a) by the rise in the birthrate in the sixties followed by a decline in the seventies.

b) by the growing individual demand for education and training on top of the increase in the size of the age cohorts.

c) by the economic recession starting in 1973/74 which was accompanied by strong and persistent unemployment in the mid-seventies and early eighties that affected graduates from higher education as well as school leavers.

The interaction of these three factors created problems for qualified young people seeking suitable jobs. Many spent a long time in the search for a job, some found only unstable or irregular employment, and some remained unemployed. As recent analyses have shown, a poor start to a career can be an enduring handicap.(1) This has intensified inter-generational inequalities. Young people, their parents, and very often educational and labour market experts themselves have been disoriented.

Was there, however, any alternative to educational expansion? Did not educational expansion and the higher qualifications of the young not correspond to the long-term needs of an industrial society with limited raw material resources? Its main resource is the quality of its human capital, which, in view of the rapid technological and social changes taking place, must be fully supported by appropriate educational and labour market policies.

The assumption that the rise in skills did correspond to the changing needs of the economy is vindicated by the relatively favourable position of highly qualified manpower on the labour market. Consider the important indicator of the relationship between the educational level of attainment and unemployment. Despite the large increase of leavers from vocational training and education and the even larger increase in the number of Higher Education (HE) graduates the relative labour market position of the qualified remained substantially better than that of the average. Unemployment rates show a strong, negative correlation with qualification. The higher the qualification, the lower is the risk of unemployment. Similarly, earnings differentials show a close correlation with levels of qualification (2).

Educational expansion had a further consequence. The increasing preference of young people for advanced educational and training courses has greatly reduced pressure on the labour market (3). Without the expansion of the past 25 years the number of pupils, apprentices and students today would have been lower by some 3 million and thus the potential job demand would have been greater to the same extent.

Available projections of the future demand for adequately qualified and highly qualified manpower show that for the next 10-20 years the number of jobs with high qualification requirements will rise substantially. One reason is the continuing shift towards the service sector and the increasing demand for highly qualified manpower in research and development, planning, qualified commercial and advisory functions, executive work, and decision making.(4) These are, of course, long-term projections at a highly aggregated level. For some groups of young people leaving the training system or higher education during the next years the transition to a regular job will be accompanied by unemployment, in adequate jobs or unstable working conditions.

However, the situation is changing. As a consequence of the decline in the birthrate since the mid-sixties, the bottlenecks of education and training capacities in the area of initial training at the medium level (i.e prior to higher education) are being remedied. The first threshold, the transition from general education to the training system, is much lower nowadays that ten years ago.

For young people leaving the training system at the medium level (vocational or apprenticeship training) the second threshold, the transition from training to employment, is starting to improve. Though many youngsters still become unemployed after training there are certain industries which complain of a growing shortage of young qualified labour ("Fachkräfte-Mangel"). This is not due to the demographic factor but the increasing economic activity in some occupations and regions.

These trends are not yet valid for several groups of higher education graduates. Because of the demographic time lags and the increased propensity to remain in education in recent years, the positive labour market situation favoured university of Fachhochshul graduates to only a smaller extent. Their unemployment rate is still rising and many graduates have difficulties in finding a stable and adequate job.

A substantial number of those leaving higher education in recent years could not utilize their skills in employment or had to accept jobs not corresponding to their wishes or below the level of their qualifications. Problems arising in this context include the obsolescence of acquired skills, and the latent menace of unemployment with its effects on individuals who have but limited possibilities for moving in search of a job or of changing job. Thus, the relationship between education, training, and unemployment is, and will remain, one of the most important concerns of educational and labour market policies and relevant research as well.

A more profound investigation of these problems must be preceded by a quantitative analysis. Because of the diversity and complexity of the questions at issue and the insufficient empirical information, the first step in such an analysis is to collect pertinent data and information. Key components are the structure of the input and output of higher education, and changes in the movement between general and higher education, on the one hand, and higher education and employment on the other.

Unfortunately, in Germany a coherent, consistent, and continuous observation of the flows between education and training and the labour market does not exist. A number of different data sources, published by various research institutes or by the Central Statistical Office, have to be compiled in order to analyse the flows between education and work and the conditions that apply. Some of this information is contradictory, depending on such factors as the aims and sources of the enquiry and its representativeness. By piecing together these "bits of reality" only a blurred picture of the destinations of higher education graduates will emerge.

The aim of this paper is to put together many of the key empirical elements. Because of the diversity of information and research undertaken in this field, there are limitations to the findings of the best known inquiries. Here we will try to reconstruct the entry and departure profiles of HE graduates and to give a summary of the problems arising, their underlying causes and the possible consequences.

Chapter II contains basic information concerning the institutional structure of education and training as well as data on quantitative development in the past.

Chapter III discusses the employment and unemployment situation of highly qualified manpower and presents the background to the specific transition problems of HE graduates analysed in the following chapters.

Chapter IV deals with the structure and change of the "inputs" into higher education, i.e. data on gymnasia (grammar school) leavers, the intention to proceed to further studies and the transition into the higher education system. Data about the development of the higher education system itself and especially about its "output" and structure complete this chapter. In addition, the specific situation of women and their problems are presented.

Chapter V discusses the main problems arising at the transition from higher education to employment. Information is provided on the transition profiles of higher education graduates and the conditions to which they are exposed on entering the labour market. The findings of some recent empirical enquiries on the transition problems for selected disciplines will also be discussed.

Chapter VI concludes the analysis with some remarks about past and future developments in the higher education system and about future inquiries required in this field.

Notes

1. H.-P. Blossfeld, "*Berufseintritt und Berufsverlauf. Eine Kohortenanalyse über die Bedeutung des ersten Berufs in der Erwerbsbiographie*". MittAB 2/1985, pp. 177 ff.

2. See the discussion in chapter III.

3. M. Tessaring *et al.* "*Bildung und Beschäftigung im Wandel. Die Bildungsgesamtrechnung des IAB*". BeitrAB 126. Nürnberg 1990 (chapter V.3).

4. C.v.Rothkirch and M. Tessaring, "*Projektionen des Arbeitskräftebedarfs nach Qualifikationsebenen bis zum Jahre 2000*". MittAB 1/1986, pp. 105 ff; Prognos AG *et al.* "*Arbeitslandschaft bis 2010 nach Umfang und Tätigkeitsprofilen*". BeitrAB 131.1, Nürnberg 1989.

II. THE HIGHER EDUCATION SYSTEM IN GERMANY

STRUCTURE AND ACCESS TO HIGHER EDUCATION

A. *Institutions*

Traditionally, higher education in Germany has been synonymous with education at universities, colleges of art and sports, theological universities and teacher training colleges. The minimum duration of university course is 4 years; qualified graduates may be admitted for doctoral studies.

The HE system was extended with the establishment of *Fachhochschulen* (short cycle higher education) in the early seventies. These offer 3 year courses mainly in technical and economic subjects with high male enrolment rates. Social work and educational studies are mostly taken by women. *Fachhochschulen* do not offer doctorates.

Comprehensive universities offer both long and short courses, usually local based; formally, the courses, teachers, and degrees awarded are different.

The post-secondary sector, *Fachschulen, Meisterschulen and Technikerschulen*, often translated as Trade and Technical Schools (TTS) though they also offer courses in social work or health care, also offers courses which are above the initial level of education but below universities and *Fachhochschulen*. *Meisterschulen* provide further training for qualified apprentices and confer the *Meister* degree which licences them, to run a workshop and train apprentices. Because of the diversity of these institutions and lack of reliable data (especially concerning transition factors) the TTS are mentioned only incidentally.(1)

In the mid-seventies, a few *Länder* founded academies of higher education which integrate both practical training in enterprises and theoretical education in the institution in the same way as the dual system at the upper secondary level. These academies (*Berufsakademien*) have had good results in placing their graduates, mostly in those enterprises where they were trained. However, their capacity is limited to about 5-6 000 places per year and their degrees are not equal to those of the *Fachhochschulen* but correspond to those of the *Fachschul*-level, with consequences for the salary levels and career opportunities of their graduates. In the statistics presented in this paper the *Berufsakademien* academies are included in the data on the TTS.

B. Access to Higher Education

Access to higher education is possible by several routes, as illustrated in figure 1. The traditional route is through completion of upper secondary school and award of the *Abitur* which confers the right to study at university or *Fachhochschulen*, unless the Abitur is obtained at a specialised gymnasium and only gives the right to study related subjects at the post-secondary level.

A few special institutions were founded in the sixties in order to enable those young people to take up post-secondary studies who had only an intermediate certificate. An intermediate certificate can be acquired at vocational extension schools (*Berufsaufbauschulen*). An entrance qualification to study a specific subject, usually in *Fachhochschulen*, may be obtained at vocational grammar schools (*Fachoberschulen*).

Access to Trade and Technical Schools is much more open. In general, completion of an apprenticeship or vocational training and some years of work experience are required. There are also schools which can be entered directly with an intermediate certificate. A TTS certificate may permit a student to continue studies at a *Fachhochschule*.

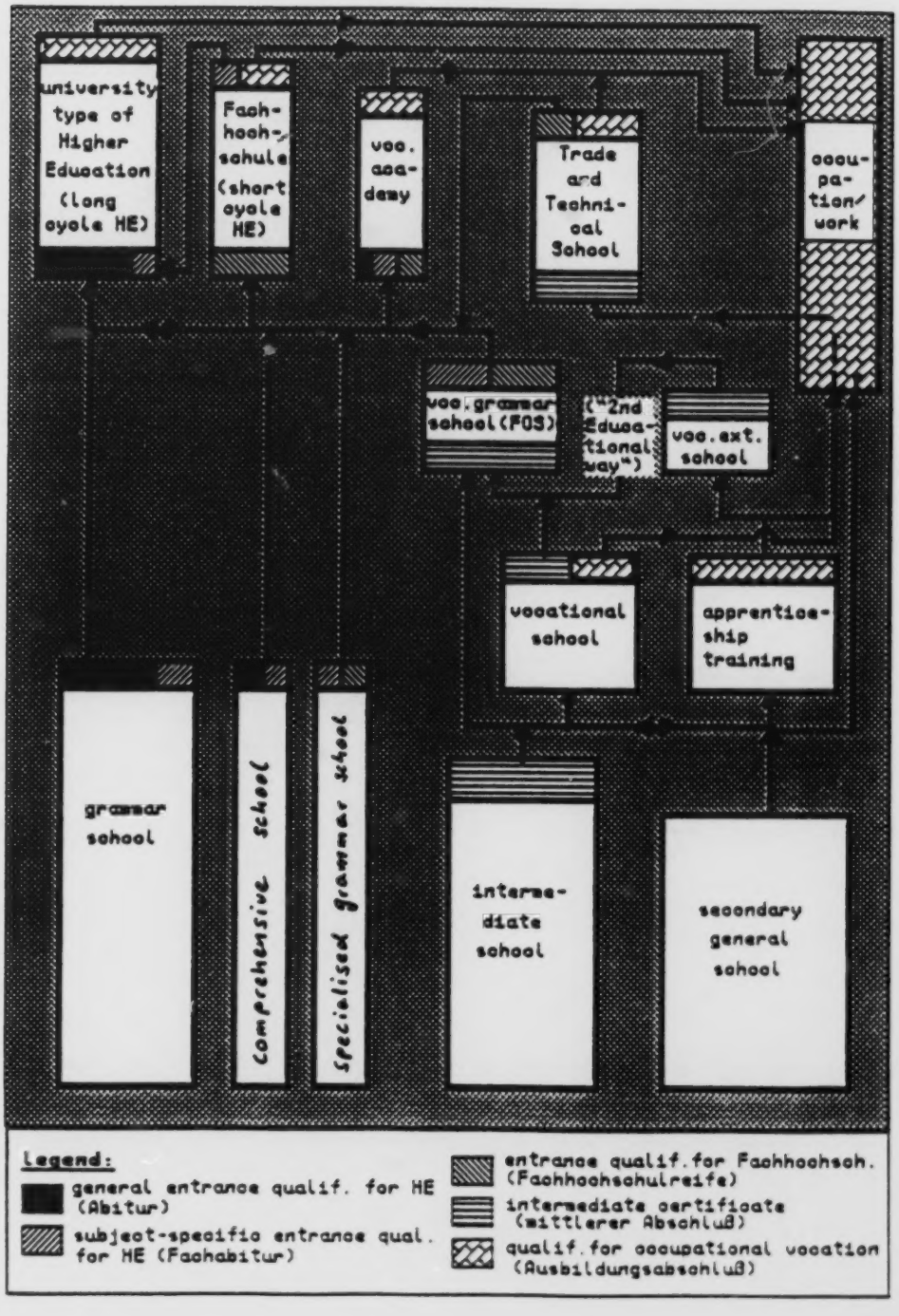
During the past 10-15 years an increasing number of young grammar school leavers have been making alternative choices. One important destination is apprenticeship training in the dual system; another is vocational or health care schools. It should be noted, however, that a number of grammar school leavers enter higher education after completing apprenticeship or vocational training or after spending some time in an enterprise. On graduation they have thus two qualifications: an occupational training certificate and a university or *Fachhochschul* degree.

A development in the past 10 years has been the increasing movement of school leavers with the *Abitur* into *Fachhochschulen*, not least because of the relatively favourable employment prospects. Another recent development has been decreasing quantitative importance of the second educational route. One reason may be the increase in counselling and guidance about educational and training opportunities and the fact that social barriers vis-à-vis qualified training are disappearing. Parents, teachers, and young people themselves are nowadays better informed about their possibilities.

High unemployment among university graduates (especially in certain disciplines) leads to a substantial number of first-year university students continuing their studies in *Fachhochschulen* where they foresee better employment opportunities. These "transfers" reflect an attempt to be more competitive on the labour market or to make better use of their time than being unemployed.

Figure 1

Routes to higher education in Germany



THE LONG-TERM DEVELOPMENT OF EDUCATION, TRAINING, AND HIGHER EDUCATION

A. Demographic Change

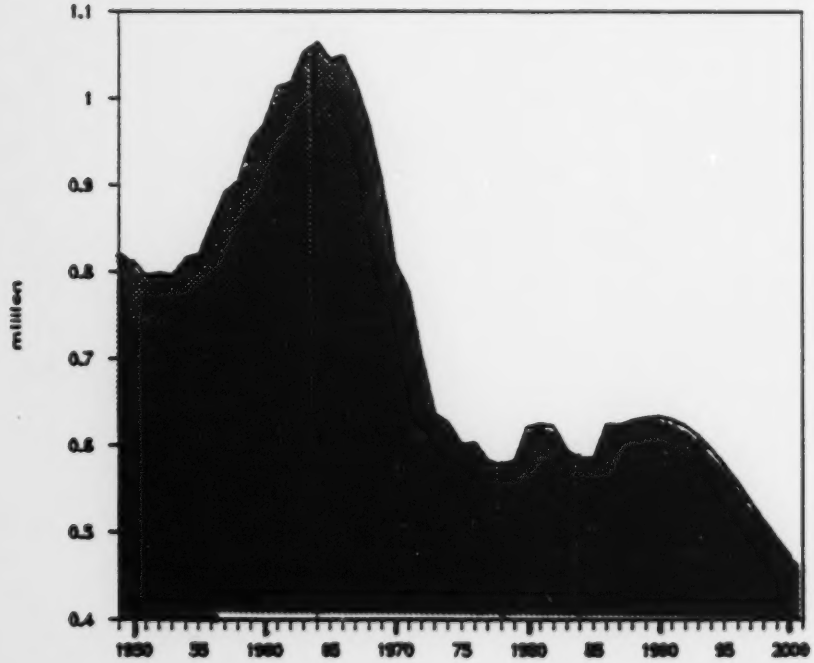
Many of the problems mentioned above have been caused by the demographic upswings and downswings of the past 30 years. As figure 2 shows, the peak of the baby boom was attained in the mid-sixties with a birthrate of more than one million.

In the following decade the birthrate dropped dramatically: in 1977 and 1984 fewer than 0.6 million births were registered. Since the mid-eighties the birthrate has started to climb again, though slowly, as those born in the sixties start to have children.

The baby boom in the sixties first affected the educational and training sector. Beginning in the late sixties, enrolments in gymnasia and later in the mid-seventies in apprenticeship and vocational training increased substantially. Because of the lack of training capacity the role and responsibility of employers, including the state, for apprenticeship training came in for severe criticism. Many researchers and politicians pointed out that a considerable number of young people were experiencing an irreversible loss of education and training opportunities (2). Today situation has been reversed: the low birthrate cohorts have passed the threshold of entrance to initial training since the mid-eighties and today are facing the threshold with the problems of the growing lack of qualified young talents (*Fachkräftelücke*) mentioned above.

Figure 2

Birth numbers in Germany (1950-2000)



B. Social Demand for Education and Training

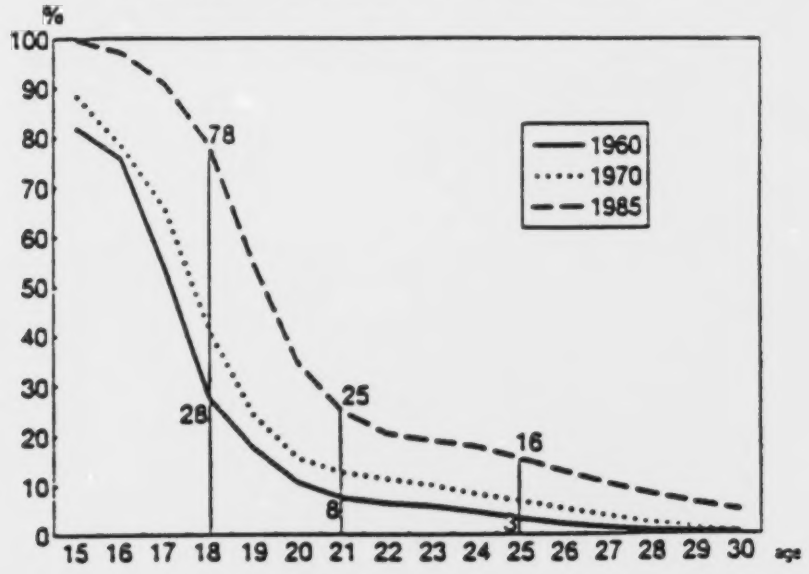
Higher education has been affected by demographic changes only marginally. As calculations with the IAB Educational Accounting System (*Bildungsgesamtrechnung*, BGR) show the rise in student numbers since 1960 has been due to demographic factors by less than 10 per cent. The key factor has been the individual demand (3). The demographic factor can influence enrolments only in the long run. After reaching a peak in the early nineties they will remain at the high level of the early eighties until the first decade of the next century.

The predominant role of participation in education and training is shown in figure 3 and -- in more detailed form -- in the annex (Table A-1). In 1960, for example, 28 per cent of the 18 year-old population took part in education and training; in 1985 the overall participation rate rose to almost 80 per cent with apprenticeship training included, Germany and Denmark have the highest enrolments among all the EEC countries (4).

The specific enrolments for 1960 and 1985 (table A-1) reveal the enormous rise in individual demand. In 1960, the highest age-specific enrolment rate was found for 22 year-olds (4.8 per cent); in 1985, 14.8 per cent of the 24 year-old population was enrolled.

Figure 3

The educational and training participation of the population aged 15 to 30 years, 1960, 1970, 1985 (in %) (1)



(1) Persons in education and training (incl. apprentices, students) in percentage of the population of same age.

Source Blien/Tessaring 1989

DATA SOURCES AND GAPS

As mentioned above, data collection in Germany is somewhat different from that in other countries. There are neither continuous statistics nor a consistent reporting system for the transition between education and employment. Furthermore, the categories of education and training institutions are not always comparable between the different *Länder*. As a consequence, education and training statistics reveal gaps and inconsistencies, though the Central Statistical Office does a good job in making them comparable.

These data, among others, are used in IAB's Educational Accounting System (BGR), established since 1987. Stock and flow data for all education and training institutions are compiled and brought together in a highly consistent fashion. The BGR is designed as a tool for educational policy and planning purposes. The basis is the cohort concept, i.e. all data are available by single birth years and by sex.

Stock data (e.g. number of pupils, apprentices and students at the beginning and the end of a year) are supplemented by flow data, i.e. the transitions from one "account" (institution) to another. Thus, it is possible to trace the paths of different birth cohorts through education and training. Additionally, the accounts of employment, unemployment, military or alternative service, unemployment and immigration or emigration are added in order to gain a comprehensive view of the destinations and origins of school leavers in the economy (5).

The fact that it took some years to calculate and to integrate transition data into the Educational Accounts shows that there is a problem. There are neither comprehensive statistics nor enquiries into the flows and transitions of all school leavers or graduates out of education and training into the labour market or elsewhere. Moreover, most of the existing enquiries and analyses are not comparable.

Many enquiries consider only specific groups and are limited to the period observed, or rely on a small sample size (problems of representativeness). Often, several heterogeneous institutions are put together, sometimes, such important characteristics as sex or nationality are missing. The age of the leavers is very rarely reported. Therefore, the BGR turns out to be the single macro-economic reporting system of the stocks and flows within education and training and between education and training and employment.

An important data source for transitions into and out of HE are the reports made by HIS (*Hochschul-Informations-System*, Hannover) for universities and *Fachhochschulen*. These enquiries are carried out in regular time-spans and are comparable with each other. Questions are asked about the demand for study and its context, the programme of studies (conditions, duration, dropout and so on) and the problems graduates face when leaving university and trying to enter into employment.

A further data source used in this report is the panel carried out by the IAB since 1977. This panel covers all young people in the age group 15-17 and, additionally, a gymnasia leaving cohort (1976), and asks in prospective interviews for intended educational and employment careers. The last enquiry was carried out in 1985. At the moment, it is still uncertain whether the panel will be continued or not.

Other sources worth mentioning are: an enquiry into the destinations of *Abiturienten* and *Fachhochschul* graduates in the early eighties, carried out by the IAB; analyses of the basis of the micro-census and unemployment statistics, mainly carried out by the IAB; various special enquiries and sample analyses of institutions, e.g. for graduates in special fields of study.

Altogether, the data on statistics (stocks, structures) are not so bad. But there are important gaps in the flow data, i.e. comparable and representative transition analyses for the most important groups of leavers and graduates.

Notes

1. If not otherwise indicated, the data and discussions in the following chapters relate to universities and *Fachhochschulen*.

2. G. Kühlewind *et al.* "*Zur drohenden Ausbildungskrise im nächsten Jahrzehnt*". Stifterverband für die deutsche Wissenschaft (ed.) "*Schülerberg und Ausbildung. Analysen und Massnahmen*", Stuttgart 1976, pp. 26 ff.

3. M. Tessaring *et al.* (1990), *op.cit.*

4. M. Tessaring. "*Das deutsche Bildungssystem und der EG-Binnenmarkt*". F. Buttler *et al.* (ed). "*Arbeits-und Sozialraum im Europäischen Binnenmarkt*". BeitrAB 129. Nürnberg 1990, pp. 89 ff.

5. For more details see M. Tessaring *et al.* (*op.cit.*) and U. Blien *et al.* "*Die Ermittlung der Übergänge zwischen Bildung und Beschäftigung: Methodische Werkzeuge und Ergebnisse der Bildungsgesamtrechnung des IAB*". MittAB 2/1990 p. 181 ff.

III. EMPLOYMENT AND UNEMPLOYMENT SITUATION OF HIGHLY QUALIFIED MANPOWER

EMPLOYMENT STRUCTURES

A. Structure of Qualifications of the Labour Force

This chapter starts by considering the evidence about structures of highly qualified manpower. Table 1 shows first the qualifications structure of the labour force 1976 to 1987. At present (1987), the share of highly qualified manpower (universities and *Fachhochschulen* taken together) adds up to 10.2 per cent of the whole labour force. Adding the level of *Fachschulen* (TTS)(7.3 per cent), about 17.5 per cent of the labour force have a higher educational degree. In absolute numbers, they represent almost 4.8 million persons.

Table 1

The structure of qualifications of the labour force in Germany 1976 - 1987

year	without completed formal training	completed apprenticeship/ vocational training	completed Trade and Technical Schools	completed training at Fachhochschulen	completed university training	total labour force (1)
(in thousands)						
1976	8 612	12 678	1 609	543	1 263	25 752
1978	7 987	13 303	1 664	598	1 371	26 021
1982	7 273	14 056	1 771	714	1 572	26 776
1985	6 359	14 157	1 973	888	1 704	26 626
1987	5 905	14 751	1 983	980	1 795	27 094
(in %)						
1976	33.4	49.2	6.2	2.1	4.9	100.0
1978	30.7	51.5	6.4	2.3	5.3	100.0
1982	27.2	52.5	6.6	2.7	5.9	100.0
1985	23.9	53.2	7.4	3.3	6.4	100.0
1987	21.8	54.4	7.3	3.6	6.6	100.0

(1) including apprentices (in Germany they are part of the labour force)
Source: Microcensus and own calcultations.

Since 1976, the number of highly qualified people has increased by about 40 per cent. Correspondingly, the share of persons not having complete a training progamme decreased from 33.4 per cent in 1976 to 21.8 per cent in 1987. There is a clear tendency for men and women to level out, though women are still underrepresented in the upper levels of the qualifications hierarchy. In 1987, women with a university degree represent 5.6 per cent of the whole female labour force (male: 7.3 per cent); another 1.9 per cent have completed a *Fachhochshule* (male: 4.7 per cent), and 3.5 per cent (male: 9.8 per cent) a *Fachschule* (TTS).

B. Fields of Study

The distribution of highly qualified manpower (university only) by fields of study in 1987 is given in figure 4 (more details are found in the annex, table A-2). The high share of male graduates in engineering, science, and economic disciplines and the high female share in languages, arts, teacher and health/social sciences are obvious.

Almost one-third of all male graduates have qualified in science and engineering, another quarter in economics and jurisprudence. 30 per cent have qualified as teachers or in the humanities, and 15 per cent as doctors (medicine is the only discipline where the female share equals that of males). The major disciplines for women are teacher education and the humanities: almost 64 per cent of the women graduates belong to this group. In the economic disciplines the female percentage is about half as high (11 per cent) whereas it is only about 10 per cent in science and engineering -- about one-third of the respective share of males.

The discrepancies in the structure of qualifications for male and female students have serious consequences for labour market opportunities, too, as will be shown in the following chapter. Since the public sector almost stopped recruiting personnel at the beginning of the eighties most of the graduates who studied those disciplines related to jobs in the public sector (teaching, languages, social work etc.) have faced serious employment problems. Women graduates are more likely to be unemployed than men.

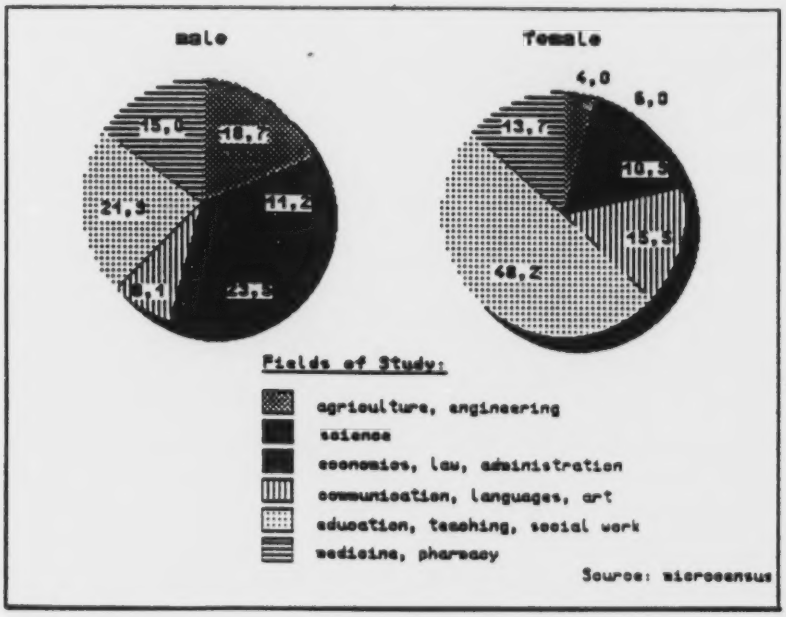
C. Sectoral Distribution

The majority of graduates at the university level are employed in the public service sector, though their share has diminished in the past 10 years: in 1976, 74 per cent and in 1985, 68 per cent of all university graduates were employed in the public sector. A considerable number worked in the private service sector (1985: 18.4 per cent) but only a small number in the secondary and primary sectors.

In 1976, graduates from *Fachhochschulen*, who had mainly studied engineering and economics (a domain of men students), mostly worked in private industry (43 per cent). Until 1985, this share diminished: employment in the public sector (38 per cent) surpassed the secondary sector. Private and public service sectors put together, in 1985 almost 2 of 3 *Fachhochschul* graduates worked in the service sectors (university graduates: 86 per cent). The percentage of *Fachschule* graduates working in the secondary (49 per cent) equals that of the service sectors (47 per cent).

Figure 4

Employed university graduates by fields of study and sex 1987 (in %)



Compared to the whole labour force, HE graduates are employed more frequently in the service than in the manufacturing sector. This fact is important since projections of future labour force demand show a continued rise in the share of services in the German economy over the next two decades. If these results materialise, graduates from post-graduate institutions will be much more favoured than groups with other qualifications.

Macro-economic projections (1) (medium variant of economic growth and productivity) foresee a diminishing demand for manpower in the primary and secondary sectors: in the period 1987 to 2010 the share of jobs in the primary sector (agriculture) will decrease from 3.7 per cent to 2.4 per cent; the relative importance of the secondary sector (manufacturing, energy, construction) will fall from 39 per cent to 32 per cent. On the other hand, the public and private service sectors will increase their share of jobs rapidly from 57 per cent (1985) to 66 per cent (2010). The decreasing number of jobs in the primary and secondary sectors (-1.7 million in the period 1987-2010) will be thus compensated by the increase in the tertiary sector in this sector 3.6 million additional jobs are expected.

Figure 5 gives an impression of the sectoral distribution of employed graduates with university and *Fachhochschul* degrees in 1985. Table A-3 (annex) contains the data for all categories of qualifications in 1976 and 1985 in a more differentiated breakdown.

Figures 6 and 7 together with table A-3 (annex) demonstrate the outcome of the expansion of higher education in Germany. They show the degree of "academization", i.e. the share of university-/*Fachhochschul* graduates of all the labour force in the specific sectors. The figures per men and women and the development between 1976 and 1985 are also illustrated.

The public sectors have the highest share of university and *Fachhochschul* trained personnel: in 1985 almost one quarter of all employees in this sector had an academic degree. Second in this ranking is the private service sector with a degree of academization of 7 per cent. In all sectors, the number of degrees is considerably higher for male employees than for females. Is is obvious that in some sectors the gaps between men's and women's qualifications have become even greater. Thus, in the public sector the difference in 1976 was 5 percentage points, and in 1985 nearly 7 percentage points.

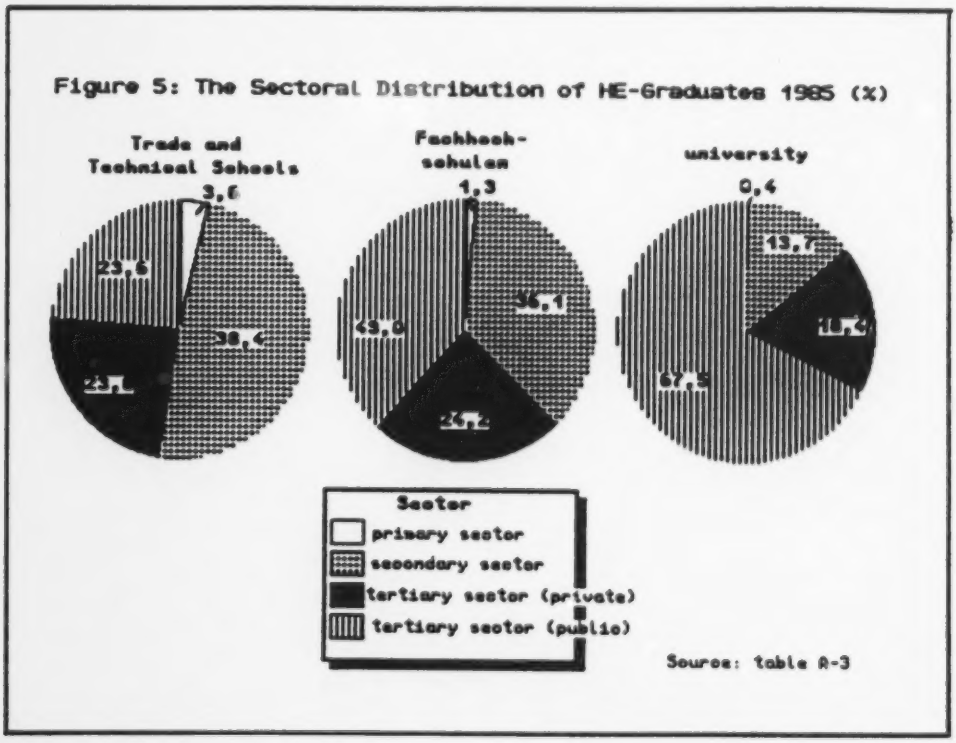


Figure 6

Degree of academization 1976 by sectors and sex (in %)

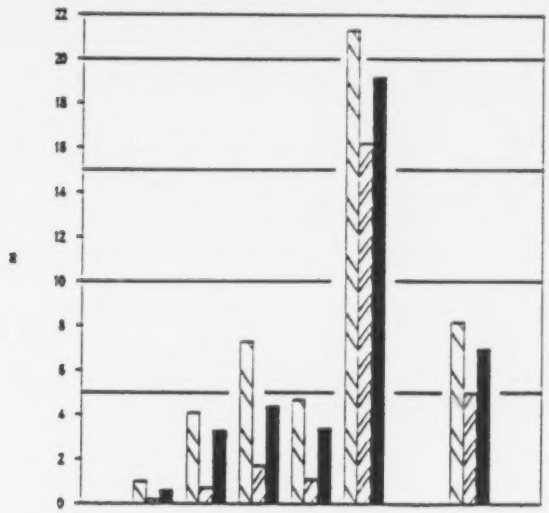
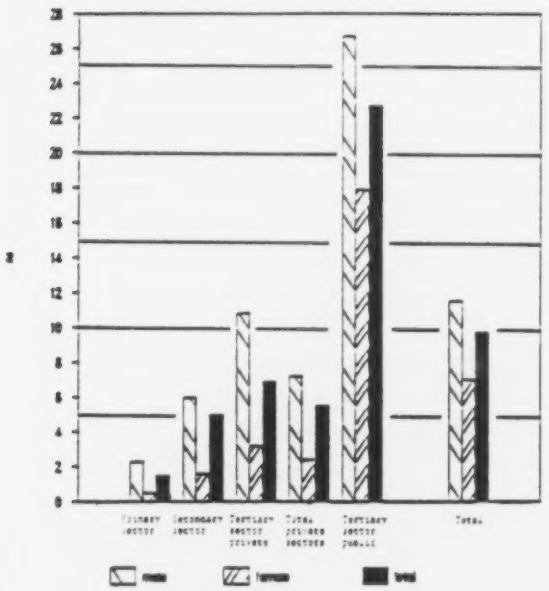


Figure 7

Degree of academisation 1985



Note : gainfully employed persons with University or Fachhochshul degree in % of total labour force in the sector.
Source: table A-3

D. Activities of Higher Education Graduates

These findings are closely correlated with the activities and occupational tasks that graduates are performing; these activities (German: *Tätigkeitsschwerpunkte*) are not equal to occupations. They are much more job-related and show, for example, whether a job performed in the manufacturing sector has a service character or not.

In 1987, the main activity of all employees was "producing, manufacturing, extracting" (35 per cent). These activities were carried out by only 8 per cent of the *Fachhochschul* graduates and by 3 per cent of the university graduates. For TTS graduates, however, these were the main activities (35 per cent). University and *Fachhochschul* graduates more frequently performed activities like "caring, consulting and teaching" (62 per cent respectively 20 per cent) and "management, research and development" tasks (24 per cent respectively 48 per cent). Another important activity for *Fachhochschul* -- and TTS -- graduates is clerical work (18 per cent/12 per cent). For more details see figure 8 and table A-4 in the annex.

Recent labour force projections by IAB/Prognos(2) predict a further rise in the importance of non-productive activities. This is, like the sectoral projections, a significant indicator of the growing need for highly qualified manpower.

Figure 8

Higher education graduates by main field of activity 1987 (in %)

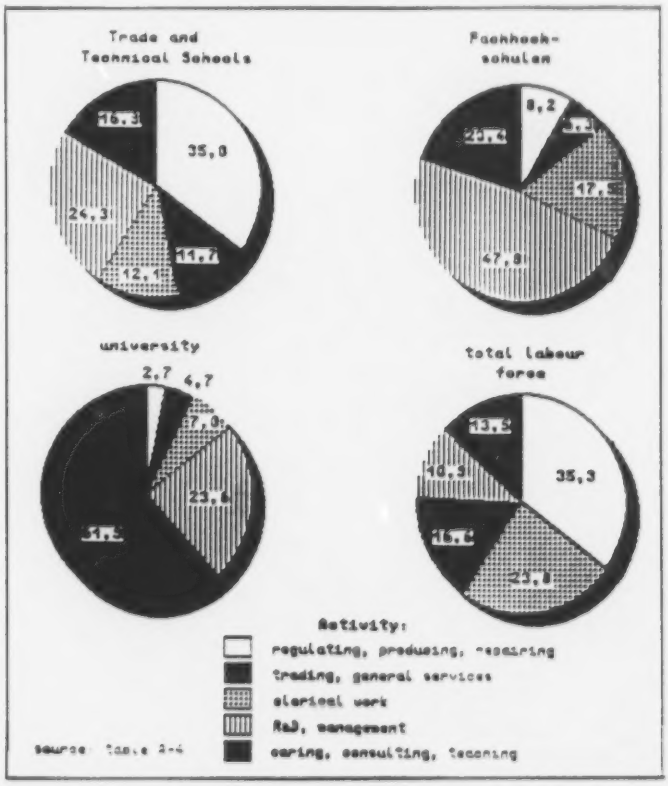
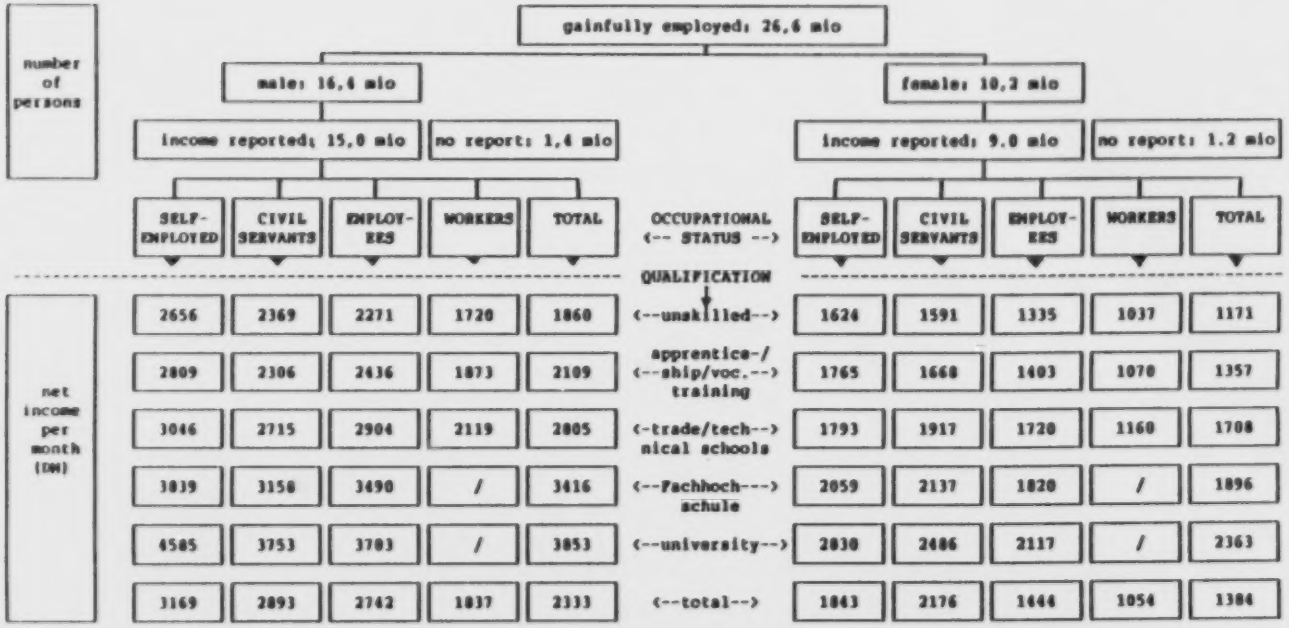


Table 2

The distribution of average net income per month 1985



net income per month (DM)	male: SELF-EMPLOYED	male: CIVIL SERVANTS	male: EMPLOYEES	male: WORKERS	male: TOTAL	OCCUPATIONAL <-- STATUS --> / QUALIFICATION	female: SELF-EMPLOYED	female: CIVIL SERVANTS	female: EMPLOYEES	female: WORKERS	female: TOTAL
	2656	2369	2271	1720	1860	<--unskilled-->	1624	1591	1335	1037	1171
	2809	2306	2436	1873	2109	apprentice-/ <--ship/voc.--> training	1765	1668	1403	1070	1357
	3046	2715	2904	2119	2805	<-trade/tech--> nical schools	1793	1917	1720	1160	1708
	3839	3158	3490	/	3416	<--Fachhoch---> schule	2059	2137	1820	/	1896
	4585	3753	3703	/	3853	<--university-->	2830	2486	2117	/	2363
	3169	2893	2742	1837	2333	<--total-->	1843	2176	1444	1054	1384

note: without soldiers and apprentices - source: Tessaring 1987, op.cit., p.290 (basis: microcensus 1985)

E. Income Distribution by Qualification

Income distribution also shows a significant correlation with the level of qualification acquired. Compared with the total average of monthly net earnings in 1985 (1980 DM) employed persons with a university degree earned 71 per cent and those with a *Fachhochschul* degree 59 per cent more (3). The income structure is substantially different for males and females when broken down by occupational status.

In 1985, self-employed males with a university degree -- mainly in liberal professions such as medicine and law -- had the highest income (4585 DM) whereas self-employed females with the same qualification earned 2830 DM on the average. At the opposite end of the income hierarchy are to be found unskilled workers with a net income of 1860/1171 DM for men and women respectively. Detailed information about income distribution is shown in table 2. The findings prove that there are strong connections between earnings and qualifications, earnings and status, and earnings and gender.

UNEMPLOYMENT

The economic recession since 1973/74 has brought about serious problems for nearly all groups in the labour market including graduates.

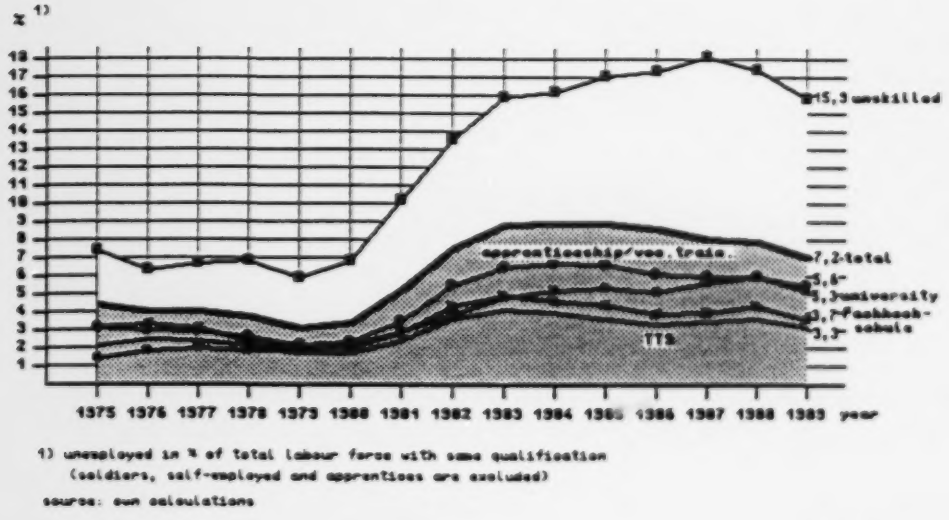
A. Unemployment Rates

Nevertheless, on the average graduates from universities, *Fachhochschulen*, and TTS-training have been more privileged than other groups. Their relative labour-market position can be illustrated best by qualification specific unemployment rates. Here the number of registered unemployed by qualification are compared with corresponding labour force group with the same qualification (self-employed and soldiers are excluded).

Figures 9 illustrates the development and position of each group within the past 14 years. There is a broad gap between the position of persons without a formal qualification on the one hand and those who have completed training or higher education on the other. The unemployment rate for the non-qualified in 1989 (16 per cent) was more than three times as high as that for peopole with any kind of training. TTS-graduates (3.3 per cent) have the lowest unemployment rate, followed by *Fachhochschule* (3.7 per cent) and university (5.3 per cent).

Figure 9

Unemployment rates by qualification 1975-1989



1) unemployed in % of total labour force with same qualification (soldiers, self-employed and apprentices are excluded)

source: own calculations

The unemployment rate for persons having completed an apprenticeship or vocational training (5.6 per cent) somewhat belies the above mentioned complaint about a supply shorage at this level. It should be remarked, however, that the unemployment rates for university graduates show a steady increase in the past years. This is due to the growing numbers of graduates, especially in those subjects which qualify mainly for jobs in the public sector. In periods of economic recession unemployment rates increase more for non-qualified than qualified persons.

B. Unemployment by Disciplines

The fact that the demand for post-graduate education, the choice of subjects, and the drop-out rate are highly correlated with job prospects and unemployment can now be proved (table 3). The figures disaggregated by disciplines show that graduates in all those fields of study which qualify to a large extent for employment in the public sector are increasingly at risk of being unemployed. (Unfortunately it is not possible to calculate specific unemployment rates by fields of study because of different classifications of the unemployment statistics and the post-secondary statistics/microcensus).

Though the absolute unemployment total increased more or less for all groups, in the period 1975-1988 the highest rate of unemployment was to be found in teaching, languages, arts, psychology, sociology, and medical science. These disciplines are dominant at the university level. There has been an absolute and relative increase in unemployed graduates who studied these disciplines. Thus, teacher unemployment in 1989 was more than ten times as high as in 1975. The same ratio applied to social studies, languages and arts.

On the other hand, engineers, economists and lawyers enjoy high levels of employment. However, in the past two years unemployment for engineers has risen above the average may be as a consequence of the alarm raised at the beginning of the eighties when industry reported a grave lack of engineers. The alarm led to a sudden increase in entrants into these disciplines one to two years later. These entrants are now at the examination stage and looking for jobs. Another reason is the growing unemployment among older engineers owing to rapid technological progress. They seem to have only limited prospects on the labour market after becoming unemployed. Engineers immigrated from eastern European countries and looking for a job are often not familiar with modern technologies and thus need further training or even retraining.

This demonstrates that planning and projecting demand in education and training always have to take account of long time lags between the adoption of a measure or announcing a projection and the output of education and training establishments.

For *Fachhochschulen*, the unemployment figures show a duality: on the one hand the engineering and economic subjects command a large share of male graduates and very few of their graduates are unemployed; on the other hand, social work with high female participation show a big rise in unemployment numbers over the past decade.

Table 3

Unemployed HE-graduates by disciplines 1975-1989

discipline	numbers of unemployed				%	
	1975	1980	1985	1989	1975	1989
university graduates						
engineering	2960	2679	7373	8048	19,1	8,1
of which:						
- mechanical engineering	599	591	1476	1973	3,9	2,0
- electrical engineering	425	466	866	1213	2,7	1,2
- architect.,civil engin.	1597	1116	3776	3149	10,3	3,2
science	1412	2306	5988	8697	9,1	8,8
languages, arts	1140	2688	9124	12449	7,4	12,5
art, music	436	885	2010	2792	2,8	2,8
medical science, pharmacy	907	2121	5702	10665	5,9	10,7
social pedagogics/care	194	1031	1672	1877	1,3	1,9
teacher studies	2658	8550	28954	29092	17,2	29,3
of which:						
- grammar school teachers	619	1809	10614	10244	4,0	10,3
- other gen.school teach.	1302	5247	15188	15158	8,4	15,3
- subject teachers	328	666	1282	1309	2,1	1,3
jurisprudence	1349	1134	3224	4490	8,7	4,5
economics,social sciences	3525	4917	11189	13622	22,8	13,7
of which:						
- economics	1708	1679	4615	5694	11,0	5,7
- psychology	529	1226	3184	4105	3,4	4,1
- sociology, politology	517	1276	2964	3618	3,3	3,6
other disc.; no response	910	1952	6348	7592	5,9	7,6
total	15491	28263	81584	99324	100,0	100,0
Fachhochschul-graduates						
agriculture	236	289	764	1070	1,6	2,7
engineering, technics	8261	4686	13198	14252	55,4	36,0
of which:						
- mechanical engineering	2359	1251	3006	4176	15,8	10,6
- electrical engineering	1369	795	1444	2616	9,2	6,6
- architect.,civil engin.	2940	1118	5073	4271	19,7	10,8
science	354	254	576	593	2,4	1,5
nautics and related disc.	60	124	256	727	0,4	1,8
journalism,interpreting, library science	173	235	551	722	1,2	1,8
art, music	1585	1606	3423	3004	10,6	7,6
social care/pedagogic	923	3314	9860	10650	6,2	26,9
teacher studies	455	665	1212	1484	3,1	3,8
economics, social science	1676	937	2256	2832	11,2	7,2
other disc.; no response	1194	1517	3864	4211	8,0	10,6
total	14917	13627	35951	39545	100,0	100,0

source: Tessaring 1989; Bundesanstalt für Arbeit

Notes

1) C.v.Rothschild and M. Tessaring (op.cit.) and Prognos AG et al. (op.cit.); Tessaring (1991, op.cit).

2) ibid.

3) M. Tessaring. "*Einkommenschancen und Ausbildung*". *BA(ed.) "Handbuch zur Berufswahlvorbereitung*" Mannheim 1987, pp. 285 ff.

IV. THE CHANGING "INPUT" AND "OUTPUT" OF HIGHER EDUCATION

This chapter starts by considering the developemnt of those schools and institutions which serve as suppliers for higher education. The following section turns to the change in individual demand and in the quantity and structure intake into post-secondary education. The chapter concludes with an examination of the changing structure of the output and additional information about the participation of women in education, training and especially in higher education.

SCHOOL LEAVERS AND ENTRANTS INTO HIGHER EDUCATION

In chapter II it was pointed out that the consequences of demographic change affected the gymnasia much more than initial training or even higher education. In the seventies an increasing number of school leavers but a stagnating or even falling number of graduates was observed. In the eighties the opposite occurred : there was a decreasing number of school leavers but an increasing number of leavers from vocational schools, apprenticeship training, and, above all, higher education.

A. School Leavers and Entrants to Higher Education

The decrease in the number of school leavers since 1980 and, more recently of leavers from vocational and apprenticeship training has led to a rise in the ratio between this group of entrants into higher education as indicated in chapter 4. In 1980, there was one entrant for every ten leavers. In 1988, the ratio was one to seven. In the future the trend will continue (Table 4). The output will continue to increase whereas the number of leavers from schools and training will drop.

B. Intention to Proceed to Higher Education

The number of entrants to higher education is influenced mainly by the motivation of gymnasia leavers and of leavers from other institutions awarding an entrance qualification. Since 1971 the Central Statistical Office has carried out enquiries into the future plans of pupils in the last year of the gymnasia as regards their intention to proceed or not to higher education, and, if so, what are their first and second subject preferences. These enquiries offer valuable basis for anticipating capacity problems. At the same time they identify potential changes in study behaviour and career choices. Unfortunately it is not possible to compare these plans and intentions with what subsequently transfuses. But the findings remain a useful indicator of the size of the intake into higher education and the choice of subjects.

Table 4

Leavers from initial education and training and entrants into HE 1970-1988

year	leavers from general education	leavers from vocational schools	leavers from apprenticeship training	total leavers from ed. + training	entrants into Higher Education	relation leavers/ HE-entrants
1970	716.5	64.2	490.0	1 270.7	125.7	0.099
1975	813.1	141.5	536.1	1 490.7	166.6	0.112
1980	988.2	178.8	623.7	1 790.7	195.0	0.109
1985	956.6	176.0	705.5	1 838.1	207.7	0.113
1986	889.8	167.3	750.9	1 808.0	210.8	0.117
1987	835.9	159.1	758.0	1 753.0	229.7	0.131
1988	769.7	159.8	719.5	1 649.0	246.2	0.149

Source: Federal Ministry of Education and Science.

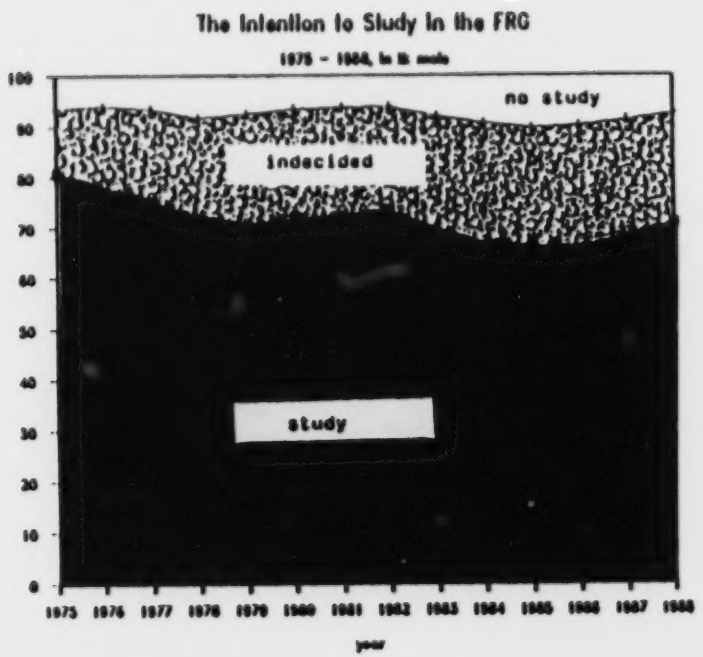
The following figures 10a and b show -- on the basis of table A-5 (annex) -- the decline in individual demand which had taken place during the last 13 years. In the early seventies, almost 90 per cent of the male and 86 per cent of the female *Abitur* intended to study after leaving school. In the second half of the seventies, the intention dropped to less than 70 per cent for female,(62 per cent) much more dramatically than for males (71 per cent). In the early eighties followed a slight increase, but in 1984-1986 an absolute minimum of the study rate: males intended to study by only 67 per cent and females by fewer than 50 per cent.

There are several reasons for this change. The main one is unemployment. The propensity to proceed to post-secondary education shows a close correlation with the unemployment figures (cf. chapter IV): in the second half of the seventies unemployment fell and the propensity increased. In the first half of the eighties the opposite occurred: unemployment rise dramatically and the propensity sharply declined.

The economic upswing after 1984/85 also had consequences for the take-up of post secondary education in the number of entrants during recent years was largely due to the increasing demand. Since 1985, the intention rate (male + female) has increased by 7 per cent from 58.6 per cent to 65.5 per cent in 1989 and, correspondingly, the decision not to continue dropped by 5 per cent. Young people may have recognized that the strong competition in the labour market required the best possible qualifications.

The shift in the fields of study favoured by school leavers also shows a high correlation with labour market prospects. While those fields leading to occupations with high unemployment numbers (cf. chapter III) lost their attraction, others with favourable prospects gained in importance. Losers included, above all, languages, arts and sports: whereas in 1975 these disciplines were favoured by 22 per cent of the pupils, in 1989 they were favoured by only 14 per cent. Winners include law, economics, social sciences (19 per cent/22 per cent) and, above all, engineering and sciences (36 per cent/42 per cent). Table 5 provides data for the years 1975-1989.

Figure 10


The Intention to Study in the FRG
no study
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study
year

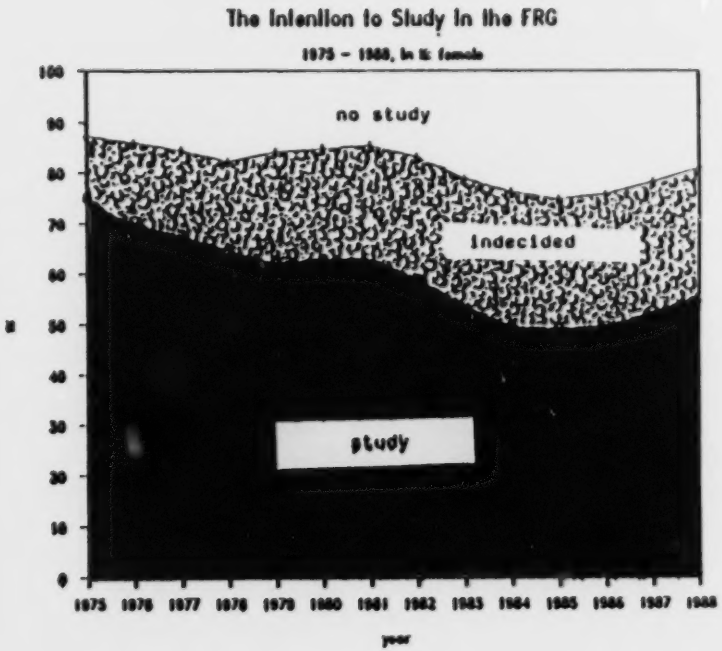

The Intention to Study in the FRG
no study
indecided
study
year

Table 5

The intention to study by disciplines 1975-1989 (in %)

field of study	1975	1980	1985	1989
languages, arts, sports	21,9	17,8	13,1	13,9
law, econ., social science	19,2	21,6	20,4	22,2
mathematics, science	13,3	13,4	14,4	15,3
medicine, veterin.	9,5	7,3	7,6	5,4
agriculture, oecotrophology	2,3	5,0	4,0	3,2
engineering	22,9	21,6	25,0	26,3
art	5,9	6,9	8,5	7,5
no response	5,0	6,4	.	.
total	100,0	100,0	100,0	100,0

source: Federal Ministry for Education and Science
note: teacher training is included in all disciplines

Apart from unemployment or assumed poor employment prospects several reasons have been put forward to account for the decrease in post-secondary applications up to mid-eighties. Most explanations centered around the financial difficulties of students caused by changes in student support schemes (from a grant to a loan system), rising rents, student, financial problems of parents, and so on (1).

Another important explanation was the deferment of studies. A growing number of school leavers chose an apprenticeship or vocational school training after the *Abitur* (2). They were even encouraged to do so because the duration of apprenticeship training for those with the *Abitur* have been reduced from 3 years on the average to 2 years.

A considerable number of school leavers who completed a vocational training decided to study later on for a variety of reasons : unemployment after training; to escape from the attractive jobs, realising that a progressive career without a university degree is nearly impossible in many enterprises. Analyses have shown that 30-40 per cent of all those with an *Abitur* who completed an apprenticeship training entered universities or *Fachhochschulen* later on.(3)

Thus, an interpretation of the propensity to proceed to post-secondary education as demonstrated in figure 10 must take into account the undecided group. The gross transition rate, i.e. the percentage of a school leaving cohort entering in post-secondary education once, independently of the time lag between the *Abitur* and entry, added up to more than 80 per cent in the late seventies but fell to 72 per cent in 1983 (4).

C. Direct Transitions into Higher Education

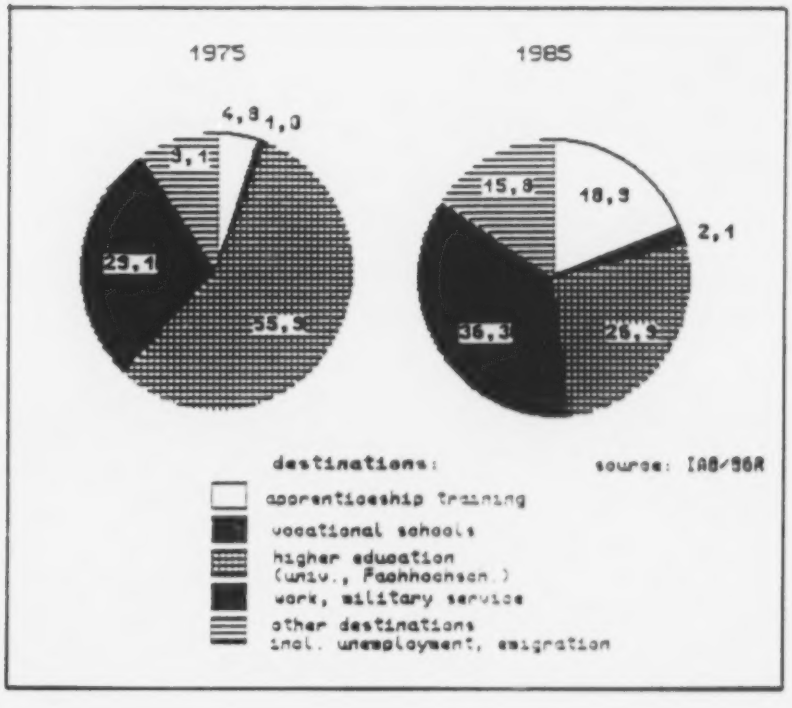
In preceding chapters data about the mobility of school leavers within a longer time period after school were analysed. The mobility rates were rather high. If we look now at the direct transitions of school leavers in the same or succeeding year the transition rates become much smaller.

In the Educational Accounting System, the transitions of gymnasia general school leavers + leavers of other schools + transitions from employment/unemployment into higher education correspond to the annual entrants as published by the official statistics. The same must be true for transitions into military service and all the other accounts of education, training and employment.

The results derived from the transition matrices of the Educational Accounting illustrated in figure 11 for the years 1975, 1980-85 are aggregated to the major accounts (basis: table A-6 in the annex). There is a decline of direct transitions into higher education: the transition rate fell from 56 per cent in 1975 to just 27 per cent in 1985. On the other hand, transitions into initial training (7 per cent/21 per cent) and work/military service (29 per cent/36 per cent) grew in importance. Direct transitions of female leavers are somewhat greater than for male leavers because they are not required to undertake military service. Female transition rates fail from 73 per cent (1975) to 33.5 per cent in 1985 whereas transition into initial education grew from 7 per cent to 22 per cent.

Figure 11

The transitions of grammar school leavers 1975/1985 (in%)



D. HE Entrants by Fields of Study

If we look further at entrants and their choice of subjects the enormous rise in the intake within the past 13 years is obvious: entrants into universities and *Fachhochschulen* together increased from 167 000 (1975) to 246 000 (1988). At the same time, there has been a shift in the structure of subjects chosen (figure 12 and table A-7 in the annex).

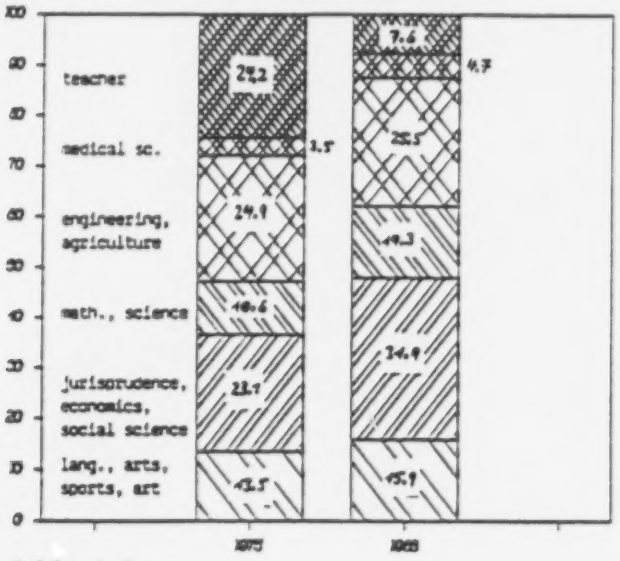
As for university entrants the share of teacher training courses (universities only) dropped dramatically from 33 per cent in 1975 to 8 per cent in 1985. In recent years there has been some decline in the attractiveness of teacher training (11 per cent in 1988); which may be a reaction of young students to the public debate about the shortage of teachers expected in the second half of the nineties. The expectation of a rising teacher demand is based on the age structure of teachers and the rising replacement demand, new requirements for in-service training, special assistance for the handicapped and reduction in the teaching load.

These factors and the growth of pupil numbers, mainly caused by the growing immigration school leavers and higher education entrants. The danger cannot be denied that such reactions may go too far and cause dislocation in the system.

The decline of teacher training courses has been paralleled by a rise in languages, arts and sports, these offering an alternative for those young people who are not inclined to study mathematics or technical subjects. The share of the liberal arts rose from 12 per cent (1975) to 21.5 per cent in 1985 and slightly dropped to 18 per cent in 1988 (parallel to the rise in teacher courses).

Figure 12

Entrants to higher education by disciplines 1975/88 (in %)



Source: Table A-7

Entrants into *Fachhochschulen* chose below increasingly economics and social sciences, mainly social work, (35 per cent in 1975 and 40 per cent in 1988) and the sciences (2 per cent/6 per cent). Unlike for the universities the importance of engineering disciplines was diminishing from 53 per cent in 1975 to 47 per cent in 1988 as was the importance of languages and arts.

STUDENTS IN HIGHER EDUCATION: STOCKS, FLOWS, AND DURATION OF STUDIES

A. Student Numbers in the Long Run

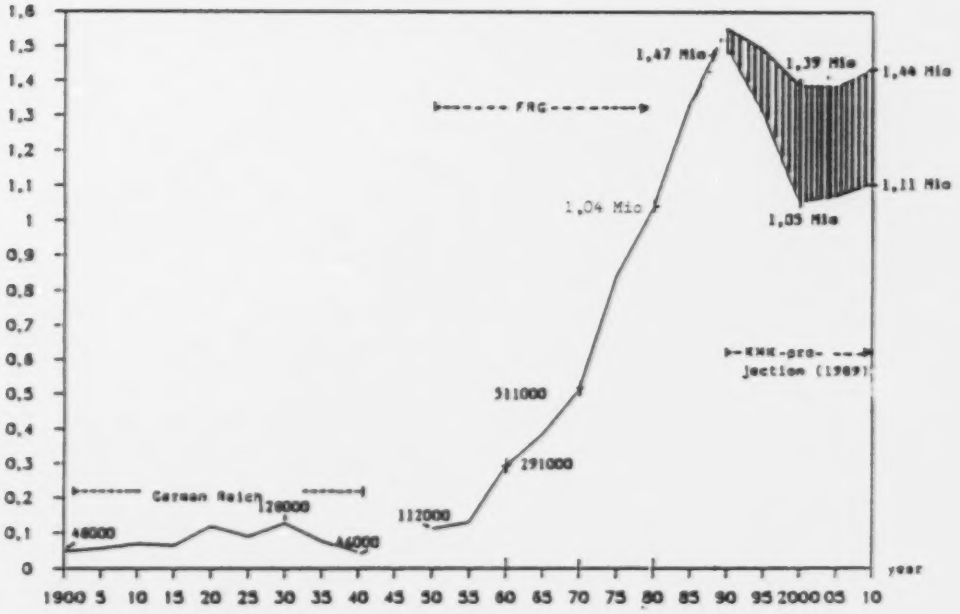
The expansion of the educational and training system in Germany occurred mainly in the higher education sector and those institutions feeding it. The number of students in the former rose from 0.3 million in 1960 to 1.5 million in 1988, an increase of 500 per cent. A comparison with student numbers in pre-war Germany illustrates the enormous expansion: In the *Deutsches Reich* numbers reached a maximum of 128 000 in 1930 and then dropped to less than 50 000 before the war. In the early fifties the numbers already exceeded at the maximum and more than doubled in the following decade.

A recent projection of the KMK (Standing Conference of the Ministers of Culture and Education of the Länder)(5), taking into account the actual change in transition behaviour, expects student numbers to decrease only slightly in the early 1990s. According to the variant calculated (the main parameters are the transition rate, and duration of study) this decrease will stop in the late nineties. As a consequence of the birth-rate increase in the late seventies numbers are expected to rise slightly in the first decade of the next century. In 2010, the KMK expects these to be 1.1-1.4 million students. The same number as in the mid-seventies.

These trends will have serious implications for higher education institutions and for the study conditions of students themselves. Former projections (which were the basis for long-term capacity planning) substantially underestimated students' numbers. They drew the conclusion that the strain on capacity during the eighties would terminate in the nineties. According to the new projections, however, the strain will persevere into the first decade of the next century. The long-term evolution of student numbers in Germany over more than one century is shown in figure 13.

Figure 13

Students in higher education (university, *Fachhochschule*)
1900-2010



note: 1900-1960 universities excl. teacher training colleges and academies of art; after 1960 incl. these institutions
source: Tessaring 1988

B. Dropouts from Higher Education

Thanks to the findings of the IAB Educational Accounts the development of stocks and flows can be analysed. Moreover, information is available about the annual entrants and leavers and about dropouts from the different institutions -- universities, *Fachhochschulen* and trade and technical schools.

Since there are no annual data about dropouts for the different levels this is an adequate method for calculating the magnitude of the numbers leaving higher education without a certificate every year. The method of calculation is as follows: given (a) the initial stock (1 january = JA) and the final stock (31 December=JE) of students and (b) the number of entrants during the year (ZU), then the number of gross outflows (AB), including graduates and dropouts, can be calculated. The equation is: JE = JA+ZU-AB or AB = JA+ZU-JE.

If the number of graduates with a degree = ABS (source: HE-statisitcs) is subtracted from the gross leavers (AB) we can obtain the number annually leaving without a certificate (dropouts = ABB). Thus: AB-ABS=ABB. The figures of ABB also include those leavers who leave only temporarily. In fact, the definition of dropouts is somewhat difficult because students are allowed to take leave for 1-2 years or, exceptionnally, even longer.

Another problem may arise from student transfers. A university receiving a student from another university, or the student himself may not declare that he had previously matriculated. Thus, students may be registered in two universities and, after some time of absence from their first university, they may appear as dropouts.

The Educational Accounting calculations described above contain findings for the three types of HE, as shown in tables 6 a-c. These show clearly the differences in drop-out rates for the three institutions and furthermore the distinction between gross and net outputs.

Dropout rates for universities did not exceed 20 per cent until the end of the seventies. In succeeding years, however, they increase to 30 per cent and more. Several reasons can be adduced for these increasing drop-out rates. The first once again may be the poor employment prospects of graduates which incited some students to discontinue their studies. A second may be the scarce capacity in universities because of the application of a *numerus clausus*. Many students could not study the subject of their first choice and took up subjects to which they were not really attracted or which were too difficult for them. Thirdly, university teachers raised their demands on students because of the overcrowding of courses and thus squeezed out students with poor motivation or specific disabilities, e.g. in mathematics.

A comparison between university and *Fachhochschul* students reveals that the latter have very few dropouts. Better employment prospects in engineering and economics, the dominant subjects in *Fachhochschulen* may supply an explanation. Another is that many *Fachhochschul* students have had experience of working life, are strongly motivated and have precise ideas about what they want to study.

Table 6

Stocks and flows in Higher Education (1975-1987) (in thousands)

Year	stocks: Initial stock 1.Jan.	stocks: final stock 31.Dec.	entrants: 1. Jan. 31.Dec.	leavers ("gross output") 1+3-2	graduates ("net output"	dropouts and other leavers 4-5	dropouts in % of net output
	1	2	3	4	5	6	7
(a) Universities							
1975	655.6	691.3	120.9	85.2	75.5	9.7	11.4
1976	691.3	715.1	120.9	97.1	80.5	16.6	17.1
1977	715.1	740.4	120.2	94.9	82.7	12.2	12.9
1978	740.4	767.1	126.7	100.0	81.9	18.1	18.1
1979	767.1	790.4	125.1	101.8	79.0	22.8	22.4
1980	790.4	836.5	138.3	92.2	77.8	14.4	15.6
1981	836.5	898.4	154.5	92.6	75.1	17.5	18.9
1982	898.4	947.8	159.9	110.5	79.4	31.1	28.1
1983	947.8	991.6	163.1	119.3	83.2	36.1	30.3
1984	991.6	1019.8	154.6	126.4	83.6	42.8	33.9
1985	1019.8	1036.8	144.3	127.3	84.7	42.6	33.5
1986	1036.8	1055.2	145.4	127.0	84.9	42.1	33.1
1987	1055.2	1082.2	158.4	131.4	85.0	46.4	35.3
(b) Fachhochschulen							
1975	133.2	144.0	42.8	32.0	30.7	1.3	4.1
1976	144.0	157.0	44.9	31.9	29.3	2.6	8.2
1977	157.0	164.0	43.1	36.1	33.3	2.8	7.8
1978	164.0	172.0	42.2	34.2	30.8	3.4	9.9
1979	172.0	181.7	47.4	37.7	34.1	3.6	9.5
1980	181.7	199.8	54.7	36.6	34.6	2.0	5.5
1981	199.8	223.0	60.0	36.8	35.4	1.4	3.8
1982	223.0	247.5	65.7	41.2	39.7	1.5	3.6
1983	247.5	272.0	69.0	44.5	41.9	2.6	5.8
1984	272.0	290.0	66.9	48.9	44.7	4.2	8.6
1985	290.0	301.3	63.4	52.1	48.0	4.1	7.9
1986	301.3	312.5	65.4	54.2	50.4	3.8	7.0
1987	312.5	328.6	71.3	55.2	52.0	3.2	5.8
(c) Fachschulen							
1975	116.0	113.7	62.1	64.4	54.2	10.2	15.8
1976	113.7	84.8	41.0	69.9	60.6	9.3	13.3
1977	84.8	72.0	41.2	54.0	50.8	3.2	5.9
1978	72.0	72.0	41.7	41.7	39.3	2.4	5.8
1979	72.0	77.5	45.1	39.6	38.3	1.3	3.3
1980	77.5	83.6	48.0	41.9	38.5	3.4	8.1
1981	83.6	89.2	51.9	46.3	42.2	4.1	8.9
1982	89.2	89.4	48.4	48.2	45.0	3.2	6.6
1983	89.4	85.3	47.1	51.2	46.9	4.3	8.4
1984	85.3	82.7	45.6	48.2	42.6	5.6	11.6
1985	82.7	82.0	45.8	46.5	42.3	4.2	9.0
1986	82.0	83.5	46.1	44.6	39.1	5.5	12.3
1987	83.5	84.8	47.0	45.7	41.0	4.7	10.3

Source: IAB-Educational Accounts (1987)preliminary and partly estimated)

The numbers of dropouts from trade and technical schools are similar to those of *Fachhochschulen*. Only in occasional years did dropout rates exceed 10 per cent. The underlying causes are also similar. The students have already been employed and many are encouraged by their employers to pursue further training. Their motivation, work organization and planning can be more efficient than that of many university students.

The findings of the IAB-panel reveal other reasons for dropping out (6). The subjects of the investigation were secondary school leavers of the year 1976 who had enrolled at post-secondary education and then dropped out. The probability of a student to dropping out is lower if the marks obtained at the *Abitur* examination are above average. Questionable motivation, changes in the choice of the subject, and ignorance of the demands of post-secondary studies are other factors that lead students to give up (parents'status) also plays an important role.

Dropout rates are somewhat higher for women than men. Table 7 shows that engineering, arts, languages, economic, and social sciences have dropout rates above average 10-12 per cent (universities and *Fachhochschulen* taken together). The lowest dropout rates are found in medicine, law, agriculture and the sciences with rates ranging between 6-8 per cent.

A further breakdown by single subjects (not included in table 7) shows that students of engineering disciplines at *Fachhochschulen* and students of economics, mathematics, and computer science at universities drop out above the average. Study requirements may have been underestimated by most of them. A surprising finding is that completion of an apprenticeship training before entry does <u>not</u> reduce the risk of dropping out. (7).

C. Duration of Studies and Age of Graduates

At present there is a vigorous public debate about the duration of studies. Many people criticize the long duration in view of the opening of the European single market and of the relatively advanced age of graduates on entering into the labour market. In fact, the duration increased by almost one year on the average in all institutions during the period 1977-1986, as table 8 shows. The increase is greater for women (+1.2 years) than for men (0.7 years).

There are several explanations for this increase in duration, starting with the difficult study conditions, the financial problems of students (a growing number is forced to work in order to survive) and the unemployment menace which makes universities a convenient refuge.

Mere statistical reasons may well also be responsible for the increase in duration. If there is a shift of students from shorter courses, especially teacher training, towards a longer ones (e.g. science and medicine) the average duration rises automatically. Another reason is demographic: if the dispersion of individual durations remains constant and those graduates who pass examination at an older age still belong to the baby boom generation whereas the younger ones already belong to the weaker age cohorts, then the aggregate duration will necessarily rise. (8) Incidentally, recent analyses show that the duration of studies is not significantly greater than in many other industrialised countries. (9)

Table 7

Dropout rates(1) of students(2) by selected characteristics 1987(in %)

	% of dropouts		
	total	male	female
1. **HE-Institution**:			
teacher training	7	7	7
university	10	7	15
Fachhochschule	14	14	13
2. **field of study**:			
medicine, pharmacy	6	4	8
jurisprudence	7	7	9
agriculture	7	3	12
science	8	8	9
languages, cultural science	10	9	10
economics, social science	10	8	15
arts	11	10	11
engineering	12	12	14
3. **social status of parents**:			
parents are not workers	10	8	11
parents are workers	9	9	6
father is worker, mother not	13	12	14
mother is worker, father not	15	15	14
4. **mark in mathematics**: (3)			
very well (sehr gut)	5	5	6
well (gut)	7	6	9
satisfying (befriedigend)	10	11	10
sufficient (ausreichend)	14	13	16
insufficient (mangelhaft)	18	17	20

1) dropouts from high education as percentage of grammar school leavers 1976 who entered HE until 1985
2) university and Fachhochschule
3) at the Abitur

Source: H. Stegmann and H. Kraft (op.cit.), p. 499

Table 8

Duration of studies at successful completion of final examination 1977-1986 (in years)

Higher Education Institution	Duration of studies 1977	1981	1986	Age at examination 1986
Universities	6.1	6.5	6.9	28.4
Compreh. universities	4.1	5.1	6.2	28.1
Teacher train. colleges	4.2	4.7	4.9	26.9
Theological colleges	5.7	5.9	6.4	27.4
Colleges of art and music	5.5	6.0	6.1	26.9
Fachhochschulen	3.7	4.1	4.5	26.7
Total : male	5.4	5.9	6.1	28.2
female	4.6	5.4	5.8	27.0
sum	5.1	5.7	6.0	27.7

Source :Federal Ministry of Education and Science

Another aspect is the age of graduates (table 9). Age is only partly influenced by the duration of study. Other factors include the leaving school age, length of military service, and preceding vocational training. There are significant differences in the mean age of graduates according to their field of study. *Fachhochschul* graduates leave by the age of 25 years (languages, arts) to 27.2 years (art, music). University graduates with diplomas or teaching degrees on the average leave at 27-28 years. A doctorate prolongs the leaving age by another 3 years (science, mathematics) to 5 years or more in languages, economics or engineering. (10)

Since the age of retirement has dropped -- owing to early retirement schemes -- to less than 60 years on the average, the working life required a pension is only 25-30 years with a doctorate. For comparison, the working life of a qualified apprentice who leaves training at 20 years of age is 10-15 years longer on the average.

As calculations on the basis of the Educational Accounting system reveal, the school and training leaving age increased substantially during the past 25 years. Rising participation in education and training and the unemployment risk led, in the period 1960-1985, to an increase of the average school leaving age by 3.3 years (male); and 3.5 years (female). In 1985, young males left education and training at 21.1 years of age and young women at 20.1 years. (11)

Table 9

Average age of German university graduates 1987 by fields of study

Field of study	Degree			
	diploma	teacher (sec.II)	doctor	Fachhoch-schule
languages, arts	28.4	27.4	33.2	25.0
economics, social sciences	27.6	28.6	33.8	26.4
mathematics, science	27.5	27.4	30.9	26.1
human medicine	-	-	30.4	-
agriculture	27.2	-	30.7	26.3
engineering	27.7	-	34.5	26.6
art, music	27.8	27.5	32.7	27.2

Source: Westdeutsche Rektorenkonferenz 1989, p.19

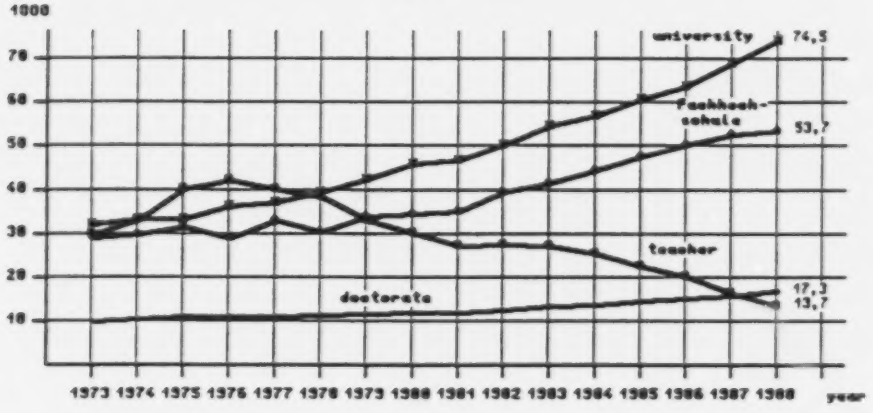
THE CHANGING PROFILE OF HIGHER EDUCATION GRADUATES

A. Graduates by Type of Institution

For an impression of the evolution of numbers of graduates on annual basis from the different types of higher education it is useful to consider figure 14 which contains the numbers of graduates from universities, *Fachhochschulen* and trade/technical schools during the period 1975-1987 (more details in the annex, table A-8).

Figure 14

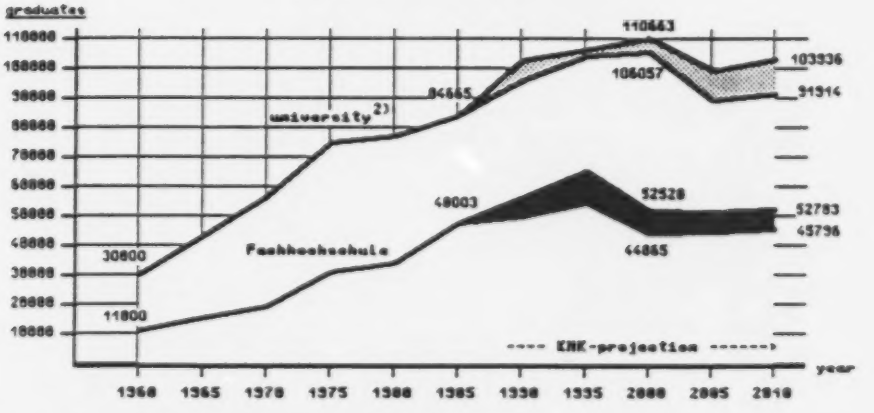
Graduates from higher education by level
(1973-1988)



source: table A-8

Figure 15

Graduates from higher education by level
projections 1960-2010 (1)



1) according to different variants calculated by KMK
2) incl. teacher graduates and doctorates as 1. degree

sources: Federal Ministry for Education and Science;
projection by Kultusministerkonferenz (KMK), 1989)

The total of university graduates shows a slow but steady increase from 75 000 in 1975 to 87 000 in 1987; the number of *Fachhochschul* graduates increased during the same period from 32 000 to 53 000 whereas the numbers of *TTS* graduates decreased from 54 000 to 39 000. The long-term evolution is illustrated in figure 15.

According to the projections of the Standing Conference of the Ministers for Culture and Education (KMK) (12) graduate numbers from university and *Fachhochschulen* will reach their maximum at 185 000 in 1994 (medium projection variant). Thereafter they will fall continuously. Nevertheless, the absolute numbers of graduates by the year 2000 will still be greater than today: according to the calculated variants 145 000 to 170 000 graduates are expected to leave the system annually. (Note: no such projections are available for *TTS* graduates).

B. Graduates by Disciplines

As the data concerning the profile-entrants by fields of study have shown in the past decade those disciplines with poor employment prospects have declined in quantitative importance whereas those with good prospects, i.e. engineering, sciences and economics have flourished. Table 10 reveals that languages, arts, art and sports increased their share from 6 per cent in 1975 to 14 per cent in 1987, as did science and mathematics. Economics and social sciences (1 per cent/22 per cent), medicine (9 per cent/15 per cent) also increased their share and there was a slighter increase for engineering and agriculture (8 per cent/13 per cent). On the other hand, graduates from teacher training decreased substantially from 55 per cent in 1975 to 19 per cent in 1987.

Table 10

Graduates by Disciplines and Level of Higher Education
(1975, 1980, 1987)

year	total grad. (1000)	field of study (% of total graduates)							
		languages, arts, sports	jurisprud., economics, social sc.	mathem., science	engi-neering	medical science, vet.med.,	agri-culture, oecotroph.	art	teacher training
		university (excl.doctorates)							
1975	74.1	6.2	14.3	7.5	6.5	8.5	1.4	0.3	54.5
1980	75.2	9.4	18.8	8.6	8.9	11.9	2.3	1.7	38.4
1987	86.0	13.6	22.0	13.6	10.2	15.1	2.8	3.1	19.4
		Fachhochschule							
1975	31.9	1.6	37.6	1.9	51.1	-	2.8	6.3	-
1980	34.7	2.0	39.8	3.2	46.4	-	4.3	4.0	-
1987	52.8	1.9	45.5	3.6	42.2	-	3.6	2.8	-

sorce: Central Statistical Office

THE PARTICIPATION OF WOMEN IN EDUCATION AND TRAINING

The participation of girls and young women has equalled or tended to equal that of boys and young men. In the intermediate schools girls with percentage shares of more than 53 per cent are slightly more represented than boys (table A-9 in the annex). If we consider especially those schools supplying the higher education (i.e. gymnasia, *Fachhochschulen* and specialized grammar schools) we see that girls apparently favour the traditional route. In gymnasia they are represented by more than 50 per cent now whereas boys more frequently pass through the *Fachoberschulen* where they have a share of almost 70 per cent.

In apprenticeship training girls are still underrepresented, though their share is continually increasing from 36 per cent in 1960 to more than 40 per cent in 1985. The explanation is that vocational schools are traditionally being the domain of girls with shares of 66-68 per cent. Table A-10 (annex) gives a more detailed comparison of the girls'share of gymnasia and apprenticeship leavers.

If we look more closer we find that in the trade and technical schools the female share is the highest among the three higher education categories. This is surprising, but it should be kept in mind that these schools are heterogeneous. They include health care, business and translator courses and social studies.

Women's motivation far further studies have been much more responsive to labour market conditions than that of males, as demonstrated above in figure 10. For young women teacher training and languages are the most important avenues to social mobility, which is closely related to the qualification hierarchy. Education expansion and equality opportunities for women have mainly taken place by teacher and arts education rather than business and science or technical disciplines.

Declining employment prospects deter women more than men , from pursuing further studies. Nevertheless, in universities the participation of women has been growing steadily. Slightly more than 40 per cent of all university students are women, as against only 27 per cent in 1960. The participation of women in the *Fachhochschulen* is also rising but at 29 per cent in 1985 remained comparably low.

Table 11 shows that only colleges of art admit equal numbers of men and women (50 per cent). Teacher training is dominated by women: 64 per cent of all teacher graduates are women and their the percentage share has increased in recent years. One third of diploma graduates and one fourth of doctorates were women in 1987.

Women choose the soft disciplines much more than men. Figure 16 (more details in table A-11, annex) illustrates that the female share is highest in languages and teacher training. Almost all disciplines in universities and in *Fachhochschulen* reveal a rising female participation. Exceptions are mathematics and sciences and engineering where, especially in *Fachhochschulen*, the female share stagnated or even decreased in recent years.

Table 11

Female share of entrants to and graduates from higher education 1960-1987 (in % of all entrants or graduates)

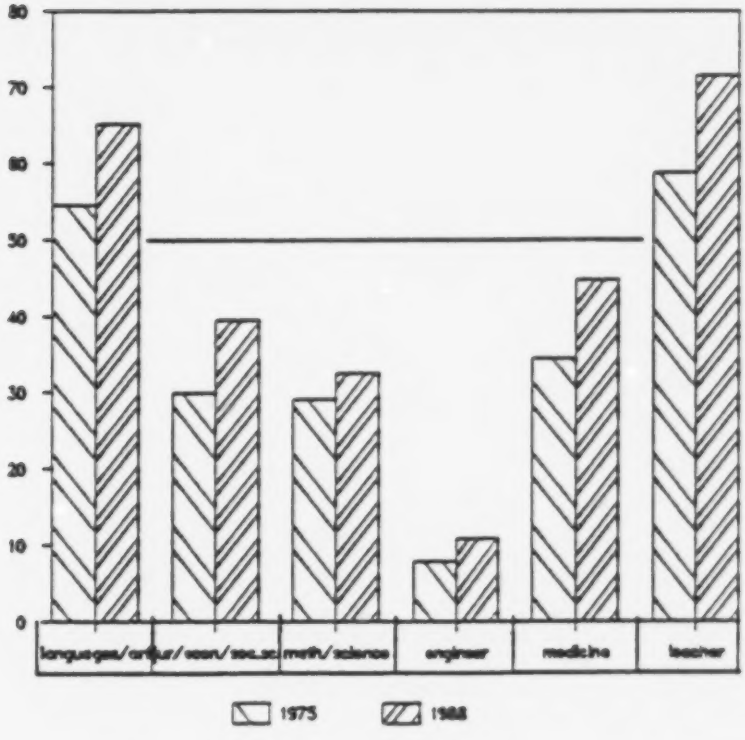
year	entrants			graduates			
	universi-ties	academies of art	Fachhoch-schulen	universities diploma	universities teacher	universities doctorate	Fachhoch-schulen
1960	34,0	38,5	.	15,3	63,2	14,5	
1965	39,8	40,0	.	14,5	67,7	15,6	
1970	38,1	38,2	.	15,3	47,3	15,0	
1975	41,0	44,0	24,0	18,5	56,4	16,8	21,3
1980	43,4	45,9	31,8	28,3	57,1	19,6	26,6
1981	45,2	48,0	32,5	28,4	56,8	20,3	29,7
1982	44,0	48,0	31,6	30,1	58,3	20,9	32,0
1983	41,2	49,3	29,4	31,4	59,7	22,4	33,2
1984	42,2	48,3	29,5	32,7	61,6	23,2	33,1
1985	43,3	49,8	31,2	32,9	63,1	24,1	33,1
1986	43,8	48,4	31,9	34,3	64,1	25,2	33,5
1987	43,6	49,7	32,5	.	.	.	.

Source: Central Statistical Office; Federal Ministry for Education and Science

The rising female share in the aggregated subjects economics + social sciences at *Fachhochschulen* is mainly in social studies. In the past 2 years however *Fachhochschulen* and universities as well faced a boom of students in economics, mainly business economics.

Figure 16

Female percentage of higher education entrants



Universities only.
Source: Table A11.

Notes

1. K.-H. Minks and R. Reissert. *"Studium, Übergang und Berufseintritt unter veränderten Arbeitsmarktbedingungen."* Hannover 1985 (chapter 3); K. Lewin et al. *"Studienwünsche und Berufswahl. Berufserwartungen und Befinden im Studium bei deutschen Studienanfängern an wissenschaftlichen Hochschulen."* HIS-Kunzinformationen A8/84, Hannover 1984.

2. K. Lewin. *"Immer später ins Studium."* HIS-Kurzinformation A4/88, Hannover 1988.

3. H. Stegmann. *"Statt UNI lieber AZUBI? Studienberechtigte und betriebliche Berufsausbildung."* MatAB 1/1986, Nürnberg 1986.

4. Recent HIS data (not yet published) indicate a substantial rise of the gross transition rate of new grammar school leaver cohorts into higher education to about 80 per cent.

5. KMK. *"Prognose der studienanfänger, Studenten und Hochschulabsolventen bis 2010."* Dokumentation 106, Bonn 1989.

6. H. Stegmann and H. Kraft. *"Bestimmungsfaktoren für den Studienabbruch und Berufswege von Studienabbrechern."* MittAB 4/1988, pp. 498 ff. Due to different concepts the dropout figures of the panel are not comparable to those of the BGR: The panel contains the dropouts during a longer time period whereas the BGR-results refer to the annual dropouts.

7. H. Stegmann and H. Kraft, op.cit. p. 500.

8. S. Hornbostel. *"Anmerkungen zur Diskussion um die Fachstudiendauer an bundesdeutschen Hochschulen."* Beiträge zur Hochschulforschung 1/2, 1988, pp. 46 ff.

9. U. Teichler. *"Hochschule und Beruf in Europa."* L. Reyher and J. Kühl (eds). *"Resonanzen. Arbeitsmarkt und Beruf -- Forschung und Politik. Festschrift für Dieter Mertens."* BeitrAB 111, Nürnberg 1988, pp. 450 ff., esp. 458 ff.; U. Teichler and '' Steube. *"Studiendauer und Lebensalter. Beiträge zur Diskussion aus 7 ausgewählten Ländern."* Bildung-Wissenschaft-international 1/89, Bonn 1989.

10. Wissenschaftsrat. *"Empfehlungen des Wissenschaftsrates zu den Perspektiven der Hochschulen in den 90er Jahren."* Köln 1988, pp. 135 ff.

11. U. Blien and M. Tessaring. *"Abgangsalter aus dem Bildungswesen und Arbeitsmarktsituation."* MittAB 1/1989, pp. 85 ff.

12. KMK 1989 (op.cit.).

V. THE TRANSITION OF HIGHER EDUCATION GRADUATES INTO EMPLOYMENT

Several sources must be used in order to analyse the transitional behaviour and problems of graduates on leaving higher education. It is not possible to obtain a consistent and comparable picture. For this reason, only the results of main surveys will be reported here, namely, the HIS enquiries, which now have a 14 years tradition, and the IAB-panel and samples. Specific findings of other analyses will be only briefly noted.

FIRST DESTINATIONS OF GRADUATES

HIS has carried out five longitudinal surveys of different cohorts of school leavers since 1976 in order to obtain reliable information about the further educational and occupational careers of secondary school graduates: 1976, 1978, 1980, 1983 and 1986.

School leavers were interviewed at least 4-5 years after taking their *Abitur* and thus had largely finished their university or *Fachhochschul* studies. For this reason the school leaving cohort of 1986 is not included in the analyses.

The following Table 12 contains the basic HIS results about the transition into employment or other activities. The results are distinguished by types of degrees and cover the period 1980 for the first school leaving cohort, 1976 to 1987 for the last, which also coincided with the most serious labour market problems.

The results reveal a remarkable correlation with the overall unemployment situation described in Chapter 3. The transition rates for all types of graduates dropped considerably in the first eighties (cohort 1978); the revival of economic activity after 1985 also facilitated an increasing movement into employment of the 1983 cohort.

The highest transition rates with 50% on the average, are found among *Fachhochschul* graduates, the lowest among teacher graduates. It should be remarked, however, that teachers, after their first examination at universities, have to pass through a probationary period at schools (normally 2 years) in order to be confirmed. Consequently, the transition ratios to candidate are about 30 per cent. A large number (1) of university graduates undergo practical training after examination (30-50 per cent).

All types of graduates were affected by unemployment: about 10 per cent had not yet found a job. The transition into irregular employment is infrequent (5-7 per cent). Exceptions are graduates from teacher training who were employed in irregular jobs to the level of 12-17 per cent. University graduates are employed much less in irregular jobs than teachers. In summary, it can be stated that, unemployment and irregular work being taken together, a high proportion of young graduates (18 per cent for the 1978 cohort and 10 to 15 per cent for the last two cohorts) are facing unfavourable conditions when

Table 12

Activity of school leavers 4-5 years after obtaining their "Abitur", by type of HE course (1976, 78, 80, 83 cohorts) in %

Type of degree	Fachhochschul diploma				teacher examination				univ. diploma other degrees				total			
Leaving school in	1976	78	80	83	1976	78	80	83	1976	78	80	83	1976	78	80	83
HE degree in	1980	82	84	87	1980	82	84	87	1980	82	84	87	1980	82	84	87
Employment	51	36	49	55	8	1	1	*)	18	8	29	23	37	25	38	51
Candidate 1)	-	-	-	-	24	30	33	*)	1	1		1	7	8	6	1
Still studying	10	15	12	2	30	36	34	*)	24	31	33	7	16	22	18	3
Second study	4	6	4	4	4	7	7	*)	9	9	2	9	5	6	5	5
Vocational study	5	7	2	2	-	1	0	*)	-	2	-	-	3	5	2	2
Practical training 2)	14	15	11	16	1	0	-	*)	29	44	34	49	11	13	11	19
Mil. service	4	2	4	9	-	)	1	*)	1	-	-	2	3	1	2	9
Unemployed	7	14	12	9	12	9	5	*)	10	3	-	6	8	12	10	8
Irregular work	3	4	3	2	17	13	12	*)	-	-	2	1	7	6	5	2
Other activity	2	1	3	1	4	3	7	*)	8	2	-	2	3	2	3	1

1) for higher civil service
2) trainee programme, preparation for public servants etc.
*) number of cases too small

Source: HIS A3/1989, p. 31

trying to enter into the labour market. Therefore, it is not surprising that a considerable number of graduates undertake further studies after graduation: so do 9 per cent of the university and 4-6 per cent of the *Fachhochschul* graduates. Another 2 per cent (last cohort) continues at a vocational school or apprenticeship training.

ENTRY CONDITIONS AND TYPE OF OCCUPATION

A. Enquiries by HIS

Table 13 gives more detailed findings on the entry conditions into employment, according to different categories, including the fact that graduates, especially females, in the private sector belong more often to those with unfavourable entry qualifications whereas those employed as public servants or who are self-employed had rather favourable ones.

Table 13

Entry conditions of university and Fachhochschul graduates, according to selected characteristics (1983)

Selected characteristics	graduates group (*) 1	2	3	4	5	6	7	8	sum
Occupational status									
Self-employed	66	10	6	3	8	-	5	2	100
Official	76	4	3	1	14	2	1	-	100
Candidate for higher civil service	23	1	7	1	13	1	30	24	100
Employee	57	5	11	5	14	2	5	2	100
Public service									
Male	57	4	7	2	17	2	6	4	100
Female	51	5	6	4	18	2	9	5	100
Private economy									
Male	71	4	10	3	6	-	5	-	100
Female	38	4	23	22	9	-	2	2	100
Completed fields of study									
Teacher	57	4	2	4	13	1	10	9	100
Lang., arts, soc. sc.	36	10	12	7	17	4	11	3	100
Jurisprudence	67	4	6	2	7	-	13	-	100
Economics	65	5	17	11	-	1	1	-	100
Mathematics, sciences	53	6	12	4	16	4	3	2	100
Medical science	47	4	5	2	39	-	4	-	100
Engineering	79	-	11	1	5	-	2	1	100
Total (n=790)	59	4	9	4	14	1	6	3	100

(*) Group definitions:

1: short job search period, job highly adequate, stable job prospects.
2: longer job search period, job highly adequate, stable job prospects.
3: short job search period, job not adequate, stable job prospects.
4: longer job search period, job not adequate, stable job prospects.
5: short job search period, job highly adequate, poor job prospects.
6: longer job search period, job highly adequate, poor job prospects.
7: short job search period, job not adequate, poor job prospects.
8: longer job search period, job not adequate, poor job prospects.

Source: Minks, Reissert 1985, p. 147 f.

The relatively best conditions can be found in the first group (Table 13); most of the engineering, econommics and law graduates belong to this group. Arts, social sciences and medicine graduates are also represented in this below average group. Groups 7 and 8, with unfavourable entry conditions consist mainly of graduate teachers and those who had studied languages and social sciences. Women have very similar patterns than men for entry into the public services, but experience many difficulties for access to employment in the private sector. The authors point out (2) that a job search period of more than half a year significantly strains the mind of graduates.

Asked about the main problem faced in the first job most respondents frequently mentioned the hectic pace of work. Further complaints were made about the tempo and pressure of scheduled work, overwork, and the lost opportunities to get on with personal interests. Less frequent were problems about adapting to work standards or relations with colleagues. All in all, these problems were more important for those graduates taking up their first employment. Graduates with previous experience of employment were much less stressed by such conditions.

A considerable number of university graduates who found a job were employed with only fixed-term contracts (3), and these were to be found much more in the public (50 per cent) than in the private sector (10 per cent). There are significant discrepancies according to fields of study. Graduates from *Fachhochschul* were employed much less frequently in the public sector (19 per cent) than university graduates (38 per cent). Unlike university graduates, most had permanent contratcs (56 per cent). The percentage of those *Fachhochschul* graduates in job creation programmes (mostly social workers) is higher than for university graduates. The majority of *Fachhochschul* graduates had studied engineering or economics and, as a rule, they had permanent contracts.

It is obvious that public sector institutions increasingly use job creation programmes, financed by the employment services, to keep their personnel or to carry out tasks which would not otherwise be done. Usually, graduates who have completed teacher training, social sciences, and psychology were employed. The summary results are illustrated in Table 14.

A large group of graduates who could not find a job used, more or less voluntarily, the interim period to pursue further training courses. These were 40 per cent of the graduates with a university degree and 34 per cent of teachers. Only 27 per cent of *Fachhochschul* graduates, women more than men, enrolled in further training courses. The preponderance of women is explained by the fact that most of them had studied social work, a sector particularly exposed to unemployment.

The large percentage of post-graduate students are preparing doctorates. The number of graduates who continue their studies in order to retain an allowance has increased in recent years. Twenty per cent of graduates in 1984 continued nominal studies whereas only 10 per cent of the graduate of 1979 did so.

Table 14

Labour force status of university and *Fachhochschul* graduates by sector of employment (1984, 1.5 years after examination, in %)

Employment contract	University		Fachhochschule	
	public sector	private sector	Public sector	private sector
Permanent contract	38	72	56	82
Fixed-term contract	50	10	26	4
In job-creation programme	4	1	10	1
Other	8	17	8	13
Total	100	100	100	100
Total on % of all grad.	38	62	19	81

Source: HIS 1987

B. IAB Panel

The IAB survey of young people started in 1976 continued until 1988. Compulsory school leavers were 15 to 17 years old and gymnasia leavers were 18-19. Today, the latter are 28-33 years old. This means that in recent years the survey embraces a rising number of persons with degrees. The following table gives the profiles of those graduates on entering employment (4).

Table 15 gives the basic results of gymnasia leavers in 1976 and their status in 1985 according to the training or higher educational level they had reached. Throughout all levels it is evident that graduates from teacher training courses have the greatest difficulty in finding a suitable job. Their participation in employment is lower than that of any other group and their unemployment rate (average for all graduates: 7 per cent) is 16 per cent (male 12 per cent, female 18 per cent). Even gymnasia leavers without formal training or higher education enjoy more success in finding jobs. Somewhat surprising is the increase in the number of graduates who decide not to work but to run a household, especially of these gymnasia leavers who did not complete their studies but took vocational training (19-25 per cent of the females). Graduates do the same by about 10-12 per cent -- women teachers more often than men.

The IAB survey has produced other interesting results about the employment status of the school leaving cohort of 1976 with completed high education studies: (5)

a) three quarters of all graduates were employed, nearly half in a good position and more than 45 per cent with a lower to medium job status. There are no significant differences between men and women graduates.

Table 15

School leavers 1976 with entrance qualification by status in 1985 (in %)

Whereabout end 1985	Total % with HE entrance			among which with completed education/training at: university compreh.			teacher training			Fachhoch-schule			apprenti-ceship			vocational schools			no completed training		
	i	m	w	i	m	w	i	m	w	i	m	w	i	m	w	i	m	w	i	m	w
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Erwerbstätig(1)	65	69	60	71	73	65	47	40	51	88	93	74	74	79	67	62	71	59	77	89	63
Referendar(in) Lehramtsan-wärter(in	6	7	5	10	11	8	21	34	14	/	/	-	-	-	-	-	-	-	-	-	-
Im Studium (3)	15	17	10	7	6	7	5	8	4	4	4	3	14	17	8	20	24	18	-	-	-
In Aus-Weiter-bildung(4)	1	1	1	1	1	1	3	5	2	1	/	2	/	-	/	/	/	/	-	-	-
Erwerbslos(5)	7	5	9	7	7	8	16	12	18	4	3	8	4	2	5	3	2	3	9	7	12
Hausfrau Hausmann(6)	5	/	14	3	/	10	8	/	11	3	-	12	8	-	19	14	-	20	12	/	25
Sonstige Tätigkeit*)(7)	1	1	1	1	2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	-
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

(*)Incl. without response Source: Stegman 4/1987, p.413

Legend: (1) in employment; (2) candidate for higher civil service;
(3) still studying; (4) in further education/training; (5) unemployed;

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b) 46 per cent of all graduates started employment in the public service (male 40 per cent, female 61 per cent). However, compared to previous cohorts, employment in the public sector is decreasing.

c) 16 per cent of all graduates were employed in part-time jobs, mostly women (28 per cent, men: 10 per cent); moreover, 29 per cent had fixed-term contracts, women more than men and teachers more than any other group. These results are similar to those of the HIS surveys reported above. Part-time and fixed-term jobs are very often combined: two-thirds of all part time jobs were fixed-term whereas only 23 per cent of full time employees had fixed term contracts. Fixed-term contracts are found more frequently in the public sector (50 per cent) than in industry (7 per cent) or in the service sector (9 per cent).

d) Some further results are notworthy. About 70 per cent of those graduates who completed their studies up to 1985 were employed (male: 76 per cent, female: 61 per cent). Employment was above average for *Fachhochschul* graduates (88 per cent), graduates whose partners were homemakers (95 per cent), and graduates who did not anticipate employment problems while still studying (85 per cent).

On the other hand, graduates from teacher training, languages and arts or law were affected by unemployment above average 10 per cent. Graduates (especially men) who had completed an apprenticeship training are significantly more likely to be employed than those graduates without apprenticeship training.

e) The earnings structure of occupational beginners reflects more or less the overall income distribution. Graduates' earnings are above the average, men's earnings being greater than women's and the earnings of TTS and *Fachhochschul* graduates lower than those of university graduates. Table 16 illustrates the earnings distribution.

The salaries per month of occupational beginners show great differences according to the type of degree. Only 19 per cent of teachers earn more than 2500 DM. 30 per cent of *Fachhochschul* graduates and 41 per cent of university graduates. Women's earnings are much lower than men's. Earnings correlate very closely with examination grades. University graduates, except teachers, have higher starting salaries than *Fachhochschul* graduates. Graduates in the private sector earn more than those in the public service.

Table 16

Distribution of graduate net monthly income in the public service and in private industry (percentage)

net income	Total graduates						from universities						from Fachhochschulen					
	total		males		females		total		males		females		total		males		females	
	Pri	Pub	Pri	Pub	Pri	Pub	Pri	Pub	Pri	Pub	Pri	Pub	Pri	Pub	Pri	Pub	Pri	Pub
under 2 000	11	33	6	23	42	51	10	25	8	20	(27)	37	8	37	4	25	(42)	60
2 000-2 500	41	40	42	45	36	30	40	35	39	37	(41)	28	43	49	44	57	(37)	32
2 500-3 000	25	17	26	20	17	13	27	22	28	22	(23)	22	25	11	26	14	(17)	6
3 000-3 500	13	5	15	5	2	4	13	9	15	9	(5)	8	13	2	15	2	-	2
3 500	8	4	8	6	3	1	8	1	9	2	(4)	-						
.....	2	1	3	1	-	1	2	1	2	3	-	1	3	/	2	/	-	-
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

(..) : not reliable because of small basis

Source: Stegmann/Kraft 4/1987, p. 427

C. Starting Salary: Results from Other Surveys

The results of the annual microcensus show a similar wage distribution. Since no question is posed about starting levels, the salaries (net per month) of persons by age have to be used as a proxy. If persons in the age group 26-36 with university of *Fachhochschul* degrees are defined as occupational beginners, microcensus results are as follows.

Net monthly salaries in 1987 exceeded those of persons without degrees by 200-250 per cent. In 1987, male graduates had earnings of 2870 DM and females of 2240 DM whereas males and females without degrees earned only 1180 DM and 1050 DM respectively. The microcensus results for several years, however, indicate that the differences between graduates and non-graduates became smaller during the period 1978-1985. This was because of the social component of taxes on earnings and contracts. (6) In 1987 the salary lead of male graduates increased once again.

The HIS surveys also contain information about the starting salaries of university and *Fachhochschul* graduates (7). The gross monthly starting salaries of university graduates (4070 DM) exceed those of *Fachhochschul* graduates (3420 DM) by 20 per cent. An analysis of earnings by fields of study reveals that physicians salaries are above the average (+ 27 per cent), followed by scientists (17 per cent). Slightly above or equal to average are the salaries of engineers and economists whereas those of teachers, arts graduates and psychologists are 20 per cent below the average.

Fachhochschul graduates, according to the subject studied, are similarly ranked. Top salaries are earned by computer specialists and industrial engineers (+ 20 per cent above average for all *Fachhochschul* graduates). At the bottom are arts and social sciences, especially social workers, with earnings of 23 per cent below the average. The distribution by fields of study is shown in table 17.

A closer inspection of the starting salaries of graduates employed in the private sector in 1989 (8) illustrates the wide salary leads of computer experts and engineers (table 18). They can expect salaries of 5000 DM or more per month. Law and economics graduates are far with monthly salaries around 4000 DM. The lowest starting salaries though on the average still higher than those of non-graduates, are earned by teachers, sociologists, and psychologists (3200-3700 DM).

Graduates with a *Fachhochschul* degree earn significantly less in the private sector than university graduates, except for engineers whose salaries equal those of university economists (4100 DM). Social workers and translators are paid less than 3000 DM. It is interesting to note that a doctorate pays off: doctors of engineering are placed at the top of the list and doctors of economics earn the same salaries as computer specialists.

Table 17

Mean salary of graduates by field of study 1984 (in DM/month)

field of study completed	university graduate	Fachhochschul graduate
Medical Science	5 150	/
Chemistry, Physics	4 750	/
Informatics, Industrial Engineering	4 490	4 090
Mechanical and Electrical Engineering	4 480	3 610
Economics	4 240	3 610
Architecture, Civil Engineering	3 980	3 390
Teacher courses	3 270	/
Pedagogics, Social Science, Psychology	3 230	2 640 (1)
Total mean salary	4 070	3 420

(1) social work, social pedagogic

Source: HIS 1987

Table 18

First gross wages of university and *Fachhochschul* graduates by selected fields of study 1989 (in DM)

Field of study	wages per month	wages per annum
Dr. Ing. (Engineer)	5 500	71 500
Dr. rer. Pol. (Economics)	5 100	66 300
Computer science	5 200	67 600
Industrial engineering	5 000	65 000
Chemistry	4 800	62 400
Medical science	4 700	61 100
Engineering	4 600	59 800
Physics	4 500	58 500
Jurisprudence (1)	4 200	54 600
Mathematics	4 200	54 600
Business economics	4 100	53 300
Biology	3 900	50 700
National economics	3 800	49 400
Psychology	3 700	48 100
Sociology	3 500	45 500
Teacher	3 200	41 600
Engineering (FH)	4 100	53 300
Business economics (FH)	3 500	45 500
Dipl. translator (FH)	2 900	37 700

Note: (1) graduates in private economy only.

Source: Grätz 1989.

D. Retraining Programmes

This chapter concludes with comments and information concerning the retraining opportunities for graduates offered by the Federal Employment Service (*Bundesanstalt für Arbeit*) for graduates. Annually about 10-15 000 graduates, mostly unemployed, participate in further training or retraining. An evaluation of those programmes shows some specific features:

Previously unemployed teachers do well after recycling. Most go into commercial or computer occupations. The employment opportunities for social workers and electrical engineers are less good after recycling. The opportunities available to recycled teachers in industrial or craft occupations are limited. On the whole, university graduates have better opportunities than *Fachhochschul* graduates in view of the fact that 46 per cent of those who took part in retraining were previously unemployed one year or more.

RECENT TRANSITION ENQUIRIES

In the following paragraphes we discuss the results of various surveys on the transition of specific groups of graduates into the labour market. These comprise (a) graduates of *Fachhochschulen* (all disciplines) 1980/82; (b) graduates of teacher education and languages (1986/87); (c) graduates of mechanical engineering, economics and social work (1983/85).

A. Transition of Fachhochschul Graduates

In 1982 the IAB carried out an enquiry into the destinations of all *Fachhochschul* graduates who qualified in 1980. The sample size was 100 per cent (n-32 000) and covered all disciplines (9). The central findings were:

a) 86 per cent of all graduates were employed two years after graduation, at least on a fixed-term or part-time basis. The rest continued their studies, passed in to military service, worked at home or were unemployed.

b) Two out of three graduates considered their studies as a satisfactory preparation for their occupations. Graduates mainly perform organisational tasks -- coordination, caring, consulting and managerial activities. Production or manual jobs are not represented. This means that *Fachhochschul* graduates are not placed in skilled workers occupations (*Facharbeiter*); a vertical substitution of skilled workers by *Fachhochschul* graduates does occur.

c) 33 per cent of the graduates have been unemployed once after graduation, women more frequently than men. Twenty per cent of those who are employed consider their jobs to be at risk.

d) After qualifying 14 per cent of graduates proceeded to further university studies. Another 6 per cent intended to study again in the near future.

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e) *Fachhochschul* graduates show relatively great mobility. About 20 per cent changed their jobs and 32 per cent their residences.

f) Only a small proportion (4 per cent) of the graduates became self-employed. The majority were employees (78 per cent); civil servants accounted for 12 per cent. Most of the graduates were placed in technical (52 per cent) or service occupations (44 per cent), the majority going into engineering, administration, or social work occupations.

To sum up: the transition of *Fachhochschul* graduates in the early eighties, although a period of increasing overall unemployment, took place without serious difficulties. Of course, there were problems in certain occupational fields. Graduates with engineering and economic degrees settled more successfully into stable jobs than social work and languages graduates.

B. The Transition of Teachers and Liberal Arts Graduates

A second follow-up study carried out by the IAB in 1986/87 concerned previously unemployed university graduates who followed teacher training or liberal arts and pedagogics courses and were employed outside schools afterwards. The sample consists of those persons who ceased to be employed in 1985; sample size was 3 580 persons. The most important results are as follows: (10)

(a) teachers

Teachers could find rather satisfying job opportunities outside schools or training institutions. 63 per cent consider their jobs to be on the whole satisfactory, and only 34 per cent as a provisional expedient. For several, the job profile was very similar to that of school teachers. This indicates that teacher training also preparates for jobs outside schools. Graduates are regarded as specialists in education in enterprises as well.

More than one third of all jobs have been newly created. However, there was a considerable number of jobs (42 per cent), that were previously held by non-graduates .

(b) liberal arts

Largely similar results as for teachers were found among those graduates who had studied liberal arts. There are discrepancies, however: first, teachers are more frequently employed in the private sector (industry, trade, banking, liberal professions whereas liberal arts graduates have found jobs mainly in the media e.g. in publishing houses, cultural institutions or universities. Secondly, almost two out fo three liberal arts graduates (61 per cent) consider jobs to be stable, though there are differences between jobs in the private and the public sector. In the latter, fixed-term contracts are rather frequent (about 50 per cent). More than 50 per cent of graduates consider their jobs as in line with their interests and expectations. Teachers employed in schools (84 per cent) however, are much more satisfied.

(c) pedagogics (including social pedagogy)

In contrast to teachers and liberal arts graduates those who had studied pedagogics had much more limited occupational opportunities. More than 3/4 of them were working in social pedagogic occupations, as researchers or teachers. Their jobs are with unions, homes and private schools, public institutions and universities. They are faced with severe competition from graduates of other disciplines.

In addition, previous work experience is required to a greater extent than for teachers or liberal arts. Without this experience the job opportunities of pedagogists tend to be zero: 55 per cent of this group had difficulties in finding a job for this reason. According to the job conditions, there were no significant discrepancies among these graduates. More than 40 per cent performed executive tasks and 2/3 considered their jobs as stable. 55 per cent indicated that their job was in line with their qualifications and interests.

C. The Transition of Mechanical Engineers, Economists, and Social Workers

An enquiry carried out for the Federal Ministry of Education and Science in 1986/87 (11) had to do with those university and *Fachhochschule* graduates who had studied mechanical engineering, economics, and social work or social pedagogy and had qualified in 1983/84 and 1984/85. The enquiry took place two years after graduation. The sample consisted of 1 617 persons.

Unemployment for these graduates has been increasing but has varied according to the category of graduates. The authors point out that altogether graduates did not face serious unemployment problems. Two years after graduation 93 per cent of the mechanical engineers, 85 per cent of the economists, and 76 per cent of the social workers had found a job. For the latter group, a distinction was made between those who had gone through one stage of training and those who had been trained in two stages (12). For the latter the transition to work was less successful (65 per cent).

The transition period in general lasts for some time and is characterized by intensive search activities, unstable jobs, and frequent further training. On the average, a time span of more than four months has been observed between graduation and taking upon the first job. Even two years after graduation the transition into employment had not always been completed.

Unemployment confronts many graduates: 16-17 per cent of engineers and economists, 35 per cent social workers (first phase) and 52 per cent (second phase). For most, unemployment is intermittent.

Though some graduates were employed in posts below their qualifications it is surprising that two years after graduation almost 20 per cent had reached a high occupational position. The average starting salary per month differed, according to the discipline studied. Engineers and economists had a mean salary about 5000 DM and more, whereas the salary of social workers did not exceed 3300 DM.

The majority of graduates (63 per cent) considered their job to be adequate, only 22 per cent were not satisfied with the content of their work. In this context, it is remarkable that engineers and economists more frequently considered their job as inadequate, though their salaries were substantially higher. Social workers, on the other hand, were more often satisfied, although their earnings were comparatively low: apparently, they had more freedom to choose their own tasks.

Discrepancies between the qualifications acquired and job requirements are more rare than expected. The authors define four types of graduates: the first type are privileged (25 per cent); the second type are normal (26 per cent); graduates performing routine work follow with 21 per cent; graduates who are unsatisfied constitute 12 per cent.

There is a significant overlapping of work tasks between university and *Fachhochschul* graduates by about 30 per cent. Exceptions are research work carried out mainly by university graduates. Employers expect practical experience more often from *Fachhochschul* than university graduates. For the latter, however, additional qualifications are valuable. The autonomy of university graduates is greater than of *Fachhochschul* graduates.

In brief, the authors state that graduates experience less difficulty in obtaining an initial employment than is often supposed. A comparison between *Fachhochschul* and university graduates reveals that the former have more difficulty in finding stable and satisfactory employment.

Notes

1) Practical training mostly takes place in an enterprise; for some disciplines (engineering, social work, economics) it is obligatory. Trainee and orientation courses for employment in the public sector are included.

2) K. H. Minks and R. Reissert(1985), op.cit., pp. 146 ff.

3) for the following results HIS. *"ERgebnisspiegel 1987"*, Hannover 1987, pp. 205 ff.

4) H. Stegmann and H. Kraft. *"Knapp zehn Jahre nach dem Abitur: Ausbildungs- und Berufswege von Studienberechtigten des Entlassjahrgangs 1976 bis Ende 1985"*. MittAB 4/1987, pp. 410 ff.

5) ibid.

6) L. Bellmann and F. Buttler. *"Lohnstrukturflexibilität - Theorie und Empirie der Transaktionskosten und Effizienzlöhne"*. MittAB 2/1989, pp. 202 ff.

7) HIS(1987), op.cit. p. 224 f.

8) F. Grätz, cit. in Technologie and management 2/89, p. 52.

9) B. Hallermann et al. *"Wege aus der Fachhochschule"* MatAB 3.1-3.14/14/1984, Nürnberg 1984.

10) K. Parmentier. *"Wege aus der Arbeitslosigkeit. Zum Berufsverbleib ehemals arbeitslos gemeldeter Lehrer, Geisteswissenschaftler, Erziehungswissenschaftler"*. MatAB 3/1989, Nürnberg 1989.

11) U. Teichler und H. Winkler. *"Der Berufsstart von Hochschulabsolventen"*. Schriftenreihe Studien zu Bildung und Wissenschaft 87 (ed.: BMBW), Bonn 1990.

12) First phase training: the obligatory occupational acknowledgment year (*berufliches Anerkennungsjahr*) is undertaken before graduation; second phase training: the acknowledgment year is undertaken after training.

VI. CONCLUSION AND PROSPECTS

Until the mid-seventies most graduates in Germany found a job in keeping with their expectations and qualifications after a relatively short search. In the second half of the seventies the generally unfavourable labour market situation affected graduates. An increasing number had difficulty in finding a job or become unemployed. Most affected were graduates seeking employment in the public sector -- teachers, social workers, languages and liberal arts graduates. To find a satisfactory job could no longer be taken for granted. The difficulty varied according to the type of degree, the field of study and gender. Job-seekers had to show flexibility and ingenuity in their search.

In the short and even medium term there is little hope that the situation will improve. The number of graduates will continue to rise and severe competition on the labour market will remain because of the scarcity of good jobs. A stable career is not assured. These hard facts have caused policy makers to seek cuts in admissions to overcrowded subjects, notably in the liberal arts. The poor employment prospects of liberal arts graduates arise mainly from cuts in the expenditures of the public services in which most have traditionally been employed (1).

Increasing unemployment among graduates has led some planners to question the very benefits of the expansion of education and training. In this paper we tried to prove that there has been no real alternative to that expansion. The overall position on the labour market shows a strong correlation between the levels of qualifications: income and levels of and social status. From the individual's point of view, given the intense competition in the labour market, it still pays to obtain the highest possible educational qualification.

It is precisely those who are unqualified who face the most serious difficulties on the labour market. They are the target groups of educational, training and labour market policies rather than higher education graduates. Similar conclusions are drawn in two papers prepared by the BLK (Federal-State-Committee for Educational Planning and Research Promotion) in 1987 and 1989 (2). The BLK expects a rising demand for graduates and a dramatically decreasing demand for unqualified persons.

The basis for this expectation is the 1985/86 projection of sectoral and occupational labour force demand until the year 2000 carried out by IAB and Prognos. The projection reaches the conclusion that if there are no ruptures in economic development (which in practice is unpredictible) the number of jobs for the unqualified will fall by three million and the demand for highly qualified manpower (university and *Fachhochschul* level) will increase by about 1.5 million. This is explained by the continuing shift towards occupational tasks, functions and characteristic of the service sector. A new projection by IAB/Prognos confirms these findings. First calculations show that there will be an even greater demand for qualified and highly qualified manpower than that foreseen in the first projection.

Nevertheless, these projections are valid only for a specified period and for aggregated groups. For sub-groups, the problems of transition between education and employment may persist in the meantime as the surveys and enquiries presented in this paper confirm. But on the whole these problems are not as serious as often supposed. Many graduates are employed in satisfactory jobs and earn salaries above the average. Problems are mainly experienced by those graduates who have studied education, the liberal arts or social work, disciplines oriented mainly towards the public sector. Engineers, scientists and economists face comparatively smaller problems in finding a satisfactory job.

This paper has also shown that in Germany there are still serious information gaps when it comes to analysing the transition patterns of graduates. This is especially true for graduates from trade and technical schools for whom virtually no surveys are available. Furthermore, the existing enquiries are often inconsistent and conflictual, thereby leading to difficulties of interpretation and divergent results. It is to be hoped that the other papers presented to the OECD will help clarify the analytical problems and lead to a minimum standard catalogue of transition and flow surveys. At least for Germany it will be necessary to adopt a consistent reporting system of the transitions from all levels of education and training into the labour market.

Note

1) Bund-Länder-Kommission für Bildungsplanung und Forschungsförderung (BLK). *"Künftige Perspektiven von Absolventen der beruflichen Bildung im Beschäftigungssystem"*. Materialien zur Bildungsplanung, Heft 15. Bonn 1987; BLK. *"Gesamtbetrachtung zu den Beschäftigungsperspektiven von Absolventen des Bildungssystems"*. Materialien zur Bildungsplanung, Heft 18, Bonn 1989.

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Table A1
Education and training: school participation rates, by single age

age	institution of education or training														
	general schools			vocational schools			apprenticeship tr.			univers./Fachh.sch			total educ./train.		
	1960	1970	1985	1960	1970	1985	1960	1970	1985	1960	1970	1985	1960	1970	1985
00-04 J.															
05-13 J.	80,0	83,5	81,9	0,0	0,1	0,0	0,0	0,0	0,0				80,1	83,6	81,9
14 Jahre	72,0	91,2	97,8	3,1	3,3	0,2	18,2	3,8	0,0				93,3	98,2	97,9
15 Jahre	32,6	50,3	88,2	5,8	8,4	5,9	43,5	29,7	5,5				81,9	88,4	99,6
16 Jahre	20,8	25,5	56,8	4,6	8,0	16,8	50,3	44,8	23,5				75,7	78,3	97,1
17 Jahre	13,6	16,0	31,5	4,3	7,9	17,3	35,7	41,6	42,0				53,6	65,5	90,7
18 Jahre	8,7	11,0	23,3	3,9	6,4	12,0	14,8	22,5	42,9	0,2	1,3	0,2	27,6	41,2	78,4
19 Jahre	5,3	5,0	10,6	3,2	5,6	9,1	7,5	8,9	31,5	1,6	4,5	3,4	17,5	24,0	54,6
20 Jahre	2,0	1,5	2,7	2,2	3,6	7,0	2,8	3,2	17,1	3,6	7,2	7,7	10,6	15,5	34,5
21 Jahre	0,5	0,5	0,6	1,5	2,1	4,4	1,1	1,2	8,4	4,4	8,7	11,4	7,5	12,6	24,9
22 Jahre	0,1	0,3	0,4	1,1	1,8	2,8	0,4	0,6	3,5	4,8	8,6	13,7	6,4	11,3	20,4
23 Jahre	0,1	0,2	0,2	0,9	1,6	2,0	0,2	0,5	2,0	4,5	7,8	14,7	5,8	10,1	19,0
24 Jahre	0,1	0,1	0,2	0,7	1,3	1,5	0,2	0,4	1,4	3,7	6,5	14,8	4,7	8,3	17,9
25 Jahre			0,1	0,5	1,0	1,1	0,1	0,3	1,1	2,6	5,5	13,2	3,3	6,9	15,5
26 Jahre			0,1	0,4	0,8	0,8	0,1	0,1	0,9	1,8	4,4	11,0	2,2	5,3	12,8
27 Jahre			0,1	0,3	0,6	0,6			0,7	1,1	3,1	9,0	1,4	3,8	10,4
28 Jahre			0,1	0,2	0,5	0,5			0,5	0,7	1,9	7,2	0,9	2,4	8,3
29 Jahre			0,1	0,2	0,3	0,4			0,3	0,5	1,2	5,7	0,7	1,6	6,5
30 Jahre				0,2	0,3	0,3			0,2	0,4	0,8	4,5	0,6	1,0	5,0
31 Jahre				0,1	0,2	0,3				0,3	0,5	3,5	0,4	0,8	3,8
32 Jahre				0,1	0,2	0,2				0,2	0,4	2,8	0,3	0,6	3,0
33 Jahre				0,1	0,2	0,2				0,2	0,3	2,2	0,3	0,5	2,4
34 Jahre				0,1	0,1	0,1				0,1	0,3	1,7	0,2	0,4	1,9
35-39 J.				0,0	0,1	0,1				0,1	0,2	1,0	0,1	0,3	1,0
40-44 J.										0,0	0,1	0,4	0,1	0,1	0,4
45-49 J.										0,0	0,0	0,1	0,0	0,0	0,1
15-17 J.	21,2	30,7	57,2	4,8	8,1	13,7	43,1	38,7	24,7			0,0	69,1	77,5	95,6
18-20 J.	5,0	5,8	12,0	3,0	5,2	9,3	7,8	11,5	30,3	1,9	4,3	3,9	17,7	26,8	55,5
21-24 J.	0,2	0,3	0,4	1,1	1,7	2,7	0,5	0,7	3,9	4,4	8,0	13,6	6,1	10,7	20,6
25-29 J.	0,0	0,0	0,1	0,3	0,6	0,7	0,0	0,1	0,7	1,4	3,0	9,3	1,8	3,7	10,8
30-34 J.				0,1	0,2	0,2				0,3	0,5	3,0	0,4	0,7	3,2

1) of the specific age-cohort of population

Source: IAB - Educational Accounts

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Table A-2: Employed University Graduates by Fields of Study and Sex 1987 (in %)

field of study	male	female
agriculture, oecotrophology, domestic science	1,6	2,0
science, mathem., informatics	11,2	6,0
enineering (consumer goods)	1,2	0,1
engineering (capital goods)	11,3	1,2
engineering (construstion), architecture	4,6	0,7
economics, organization, management	13,0	5,6
public security, jurisprudence	8,9	3,8
sociology, political science, administration	1,6	1,5
communication, documentation, media	1,0	1,5
lanuages, cultural sciences	4,9	10,7
arts, design	2,2	3,3
education, teaching, social work	21,9	48,2
health, medicine, pharmacy	15,0	13,7
other	1,9	1,7
total	100,0	100,0

Source: microcensus/IAB

Table A3
The qualification structure of the labour force, by economic sector and sex: 1976

lfd. Nr.	Wirtschaftszweig	ohne Ausbildungsabschluß: ohne Auszubildende	ohne Ausbildungsabschluß: Auszubildende	Lehre, Berufsfachschule	Fachschule	Fachhochschule	Wiss. Hochschule	insgesamt
				Männer				
1	Land-, Forstwirtschaft, Fischerei	465,1	14,5	243,7	44,3	/	/	775,2
2	Energiewirtsch., Wasserversorgung, Bergbau	127,6	14,3	281,7	38,1	16,2	10,8	488,7
3	Grundstoff-/Produktionsgüterindustrie	654,5	60,2	1062,0	137,3	43,7	44,2	2001,9
4	Stahl-, Maschinen-, Fahrzeugbau	491,3	149,9	1175,8	185,9	56,7	25,4	2085,0
5	Elektrotechnik, Feinmechanik, Optik	205,9	66,0	497,4	106,0	52,1	31,1	958,5
6	Verbrauchsgüterindustrie	309,8	38,1	565,6	105,0	9,1	7,8	1035,4
7	Nahrungs-, Genußmittelindustrie	132,1	29,9	260,9	84,5	/	5,4	517,3
8	Baugewerbe	470,9	83,1	908,3	140,8	37,7	13,2	1654,0
9	Handel	290,4	71,8	852,4	118,2	19,1	30,1	1382,0
10	überweg. privater Verkehr	163,6	7,5	300,8	19,1	8,1	/	502,9
11	Post, Bahn	190,7	22,2	456,8	40,1	20,5	5,5	735,8
12	Kreditinstitute, Versicherungsgewerbe	58,2	13,2	274,3	29,7	9,7	19,7	404,8
13	überweg. private Dienstleistungen	138,4	19,0	275,0	65,9	11,3	8,8	518,4
14	Wissenschaft, Bildung, Erziehung, Sport	21,2	/	51,2	15,3	10,1	298,7	399,1
15	Kunst, Medien, Verlage	35,1	/	68,2	15,1	8,8	16,0	145,3
16	Gesundheits-, Veterinärwesen	29,8	8,0	72,2	16,6	/	126,4	255,3
17	Beratung, Architekt.-, Ingenieurbüros	28,2	11,8	65,2	27,9	44,8	53,3	231,2
18	Organis. ohne Erwerbschar., priv. Haush.	23,9	/	48,5	10,3	6,4	50,4	142,9
19	Gebietskörperschaften, Sozialversicherung	439,8	14,8	1021,1	166,4	92,4	107,2	1841,7
20	ohne Angabe	28,6	8,1	45,1	6,6	/	/	96,5
	Summe	4305,1	640,5	8526,2	1373,1	461,4	865,6	16171,9
				Frauen				
1	Land-, Forstwirtschaft, Fischerei	695,0	5,2	126,7	8,5	/	/	836,8
2	Energiewirtsch., Wasserversorgung, Bergbau	17,2	/	25,8	/	/	/	45,8
3	Grundstoff-/Produktionsgüterindustrie	302,5	16,5	239,0	10,4	/	/	575,9
4	Stahl-, Maschinen-, Fahrzeugbau	189,6	14,5	171,7	5,4	/	/	384,3
5	Elektrotechnik, Feinmechanik, Optik	311,9	10,9	181,2	6,6	/	/	514,1
6	Verbrauchsgüterindustrie	493,1	25,1	321,0	12,4	/	/	855,1
7	Nahrungs-, Genußmittelindustrie	153,2	16,1	136,2	/	/	/	308,6
8	Baugewerbe	48,3	/	89,7	/	/	/	147,2
9	Handel	559,2	92,3	1011,7	24,0	6,4	19,2	1712,8
10	überweg. privater Verkehr	40,6	5,5	58,3	/	/	/	107,5
11	Post, Bahn	83,0	/	88,1	5,0	/	/	178,8
12	Kreditinstitute, Versicherungsgewerbe	102,8	19,3	244,6	6,6	/	/	378,0
13	überweg. private Dienstleistungen	434,9	53,9	357,8	29,6	/	/	883,1
14	Wissenschaft, Bildung, Erziehung, Sport	104,5	7,6	96,3	25,2	14,9	264,3	512,8
15	Kunst, Medien, Verlage	47,9	/	59,0	5,3	/	6,6	124,4
16	Gesundheits-, Veterinärwesen	251,0	84,7	361,6	43,5	12,0	45,8	798,6
17	Beratung, Architekt.-, Ingenieurbüros	38,8	22,9	105,5	7,9	/	5,2	184,3
18	Organis. ohne Erwerbschar., priv. Haush.	130,3	5,1	98,7	10,2	5,2	9,8	259,3
19	Gebietskörperschaften, Sozialversicherung	269,2	14,9	349,7	24,0	14,7	27,9	700,4
20	ohne Angabe	33,9	/	28,9	/	/	/	72,6
	Summe	4306,8	406,8	4151,5	236,1	81,7	397,5	9580,4
				Männer + Frauen				
1	Land-, Forstwirtschaft, Fischerei	1160,1	19,7	370,4	52,8	5,8	/	1612,0
2	Energiewirtsch., Wasserversorgung, Bergbau	144,8	14,9	307,5	39,3	16,5	11,5	534,5
3	Grundstoff-/Produktionsgüterindustrie	957,0	76,7	1301,0	147,7	47,7	47,7	2577,8
4	Stahl-, Maschinen-, Fahrzeugbau	680,9	164,4	1347,5	191,3	58,3	26,9	2469,3
5	Elektrotechnik, Feinmechanik, Optik	517,8	76,9	678,6	112,6	54,6	32,1	1472,6
6	Verbrauchsgüterindustrie	802,9	63,2	886,6	117,4	11,2	9,2	1890,5
7	Nahrungs-, Genußmittelindustrie	285,3	46,0	397,1	86,6	/	6,0	825,9
8	Baugewerbe	519,2	87,6	998,0	144,4	38,3	13,7	1801,2
9	Handel	849,6	164,1	1864,1	142,2	25,5	49,3	3094,8
10	überweg. privater Verkehr	204,2	13,0	359,1	21,0	8,6	/	610,4
11	Post, Bahn	273,7	23,8	544,9	45,1	20,9	6,2	914,6
12	Kreditinstitute, Versicherungsgewerbe	161,0	32,5	518,9	36,3	11,7	22,4	782,8
13	überweg. private Dienstleistungen	573,3	72,9	632,8	95,5	14,7	12,3	1401,5
14	Wissenschaft, Bildung, Erziehung, Sport	125,7	10,2	147,5	40,5	25,0	563,0	911,9
15	Kunst, Medien, Verlage	83,0	/	127,2	20,4	13,1	22,6	269,7
16	Gesundheits-, Veterinärwesen	280,8	92,7	433,8	60,1	14,3	172,2	1053,9
17	Beratung, Architekt.-, Ingenieurbüros	67,0	34,7	170,7	35,8	48,8	58,5	415,5
18	Organis. ohne Erwerbschar., priv. Haush.	154,2	8,5	147,2	20,5	11,6	60,2	402,2
19	Gebietskörperschaften, Sozialversicherung	709,0	29,7	1370,8	190,4	107,1	135,1	2542,1
20	ohne Angabe	62,4	12,4	74,0	9,3	/	9,5	169,1
	Summe	8611,9	1047,3	12677,7	1609,2	543,1	1263,1	25752,3

Table A3
The qualification structure of the labour force, by economic sector and sex: 1985

lfd. Nr.	Wirtschaftszweig	ohne Ausbildungsabschluß: ohne Auszubildende	ohne Ausbildungsabschluß: Auszubildende	Lehre, Berufsfachschule	Fachschule	Fachhochschule	Wiss. Hochschule	insgesamt
				Männer				
1	Land-, Forstwirtschaft, Fischerei	268,1	30,4	300,9	55,2	9,1	6,4	670,1
2	Energiewirtsch., Wasserversorgung, Bergbau	85,8	18,5	276,8	45,4	29,0	11,2	466,7
3	Grundstoff-/Produktionsgüterindustrie	443,8	70,9	984,5	139,8	49,8	57,7	1746,5
4	Stahl-, Maschinen-, Fahrzeugbau	365,5	203,3	1332,3	252,0	85,1	47,3	2285,5
5	Elektrotechnik, Feinmechanik, Optik	155,1	67,8	552,9	138,3	77,9	52,3	1044,3
6	Verbrauchsgüterindustrie	212,0	56,9	555,1	106,2	15,0	9,8	955,0
7	Nahrungs-, Genußmittelindustrie	79,6	48,4	241,1	83,8	/	8,3	466,1
8	Baugewerbe	305,8	120,2	848,3	145,3	43,4	18,5	1481,5
9	Handel	227,9	87,3	934,2	138,1	27,6	43,6	1458,7
10	überwieg. privater Verkehr	134,3	9,0	357,8	24,6	15,3	9,8	550,8
11	Post, Bahn	90,7	31,1	396,8	56,9	31,3	5,7	612,5
12	Kreditinstitute, Versicherungsgewerbe	42,2	25,0	330,8	38,3	25,0	35,7	497,0
13	überwieg. private Dienstleistungen	195,8	38,3	404,6	87,7	23,5	29,9	779,8
14	Wissenschaft, Bildung, Erziehung, Sport	29,7	9,5	73,7	31,5	16,6	373,9	534,9
15	Kunst, Medien, Verlage	29,8	/	67,3	17,2	9,1	18,9	143,5
16	Gesundheits-, Veterinärwesen	44,5	11,6	122,1	22,9	6,0	149,8	356,9
17	Beratung, Architekt.-, Ingenieurbüros	19,6	7,6	76,0	39,8	64,9	100,0	307,9
18	Organis. ohne Erwerbschar., priv. Haush.	28,8	5,4	60,8	13,4	15,7	53,1	177,2
19	Gebietskörperschaften, Sozialversicherung	444,5	26,4	924,6	174,3	174,6	122,4	1866,8
	Summe	3203,5	868,8	8840,6	1610,7	723,8	1154,3	16401,7
				Frauen				
1	Land-, Forstwirtschaft, Fischerei	376,3	21,1	174,9	16,0	/	/	591,3
2	Energiewirtsch., Wasserversorgung, Bergbau	11,4	/	31,2	/	/	/	45,3
3	Grundstoff-/Produktionsgüterindustrie	220,6	22,9	236,9	9,4	/	8,6	503,0
4	Stahl-, Maschinen-, Fahrzeugbau	159,7	23,6	210,4	8,8	/	6,2	411,7
5	Elektrotechnik, Feinmechanik, Optik	228,4	19,6	247,8	10,3	/	5,0	515,4
6	Verbrauchsgüterindustrie	310,3	33,5	334,9	19,4	/	/	703,8
7	Nahrungs-, Genußmittelindustrie	117,2	35,2	155,2	/	/	/	312,1
8	Baugewerbe	44,8	9,4	94,7	/	/	/	156,7
9	Handel	414,7	132,3	1188,8	40,2	11,9	24,6	1812,5
10	überwieg. privater Verkehr	41,2	7,6	89,2	/	/	/	145,2
11	Post, Bahn	69,6	7,0	111,1	/	/	/	197,9
12	Kreditinstitute, Versicherungsgewerbe	81,0	29,1	329,6	8,4	/	6,3	457,9
13	überwieg. private Dienstleistungen	418,3	102,3	528,7	52,7	18,2	12,4	1132,6
14	Wissenschaft, Bildung, Erziehung, Sport	109,3	21,4	158,6	44,1	22,9	324,8	681,1
15	Kunst, Medien, Verlage	36,9	/	68,7	6,6	5,1	12,6	133,5
16	Gesundheits-, Veterinärwesen	187,4	123,7	592,8	71,5	12,4	65,6	1053,4
17	Beratung, Architekt.-, Ingenieurbüros	33,4	37,6	172,0	12,4	7,6	18,2	281,2
18	Organis. ohne Erwerbschar., priv. Haush.	94,7	14,6	138,9	18,0	13,0	12,0	291,2
19	Gebietskörperschaften, Sozialversicherung	200,5	31,4	451,8	28,7	43,6	42,5	798,5
	Summe	3155,7	676,8	5316,2	362,3	163,7	549,6	10224,3
				Männer + Frauen				
1	Land-, Forstwirtschaft, Fischerei	644,4	51,5	475,8	71,2	11,5	7,0	1261,4
2	Energiewirtsch., Wasserversorgung, Bergbau	97,2	19,4	308,0	47,2	29,0	11,2	512,0
3	Grundstoff-/Produktionsgüterindustrie	664,4	93,8	1221,4	149,2	54,4	66,3	2249,5
4	Stahl-, Maschinen-, Fahrzeugbau	525,2	226,9	1542,7	260,8	88,1	53,5	2697,2
5	Elektrotechnik, Feinmechanik, Optik	383,5	87,4	800,7	148,6	82,2	57,3	1559,7
6	Verbrauchsgüterindustrie	522,3	90,4	890,0	125,6	16,8	13,7	1658,8
7	Nahrungs-, Genußmittelindustrie	196,8	83,6	396,3	86,5	5,5	9,5	778,2
8	Baugewerbe	350,6	129,6	943,0	149,1	44,6	21,3	1638,2
9	Handel	642,6	219,6	2123,0	178,3	39,5	68,2	3271,2
10	überwieg. privater Verkehr	175,5	16,6	447,0	27,3	18,4	11,2	696,0
11	Post, Bahn	160,3	38,1	507,9	61,7	35,8	6,6	810,4
12	Kreditinstitute, Versicherungsgewerbe	123,2	54,1	660,4	46,7	28,5	42,0	954,9
13	überwieg. private Dienstleistungen	614,1	140,6	933,3	140,4	41,7	42,3	1912,4
14	Wissenschaft, Bildung, Erziehung, Sport	139,0	30,9	232,3	75,6	39,5	698,7	1216,0
15	Kunst, Medien, Verlage	66,7	/	136,0	23,8	14,2	31,5	277,0
16	Gesundheits-, Veterinärwesen	231,9	135,3	714,9	94,4	18,4	215,4	1410,3
17	Beratung, Architekt.-, Ingenieurbüros	53,0	45,2	248,0	52,2	72,5	118,2	589,1
18	Organis. ohne Erwerbschar., priv. Haush.	123,5	20,0	199,7	31,4	28,7	65,1	468,4
19	Gebietskörperschaften, Sozialversicherung	645,0	57,8	1376,4	203,0	218,2	164,9	2665,3
	Summe	6359,2	1545,6	14156,8	1973,0	887,5	1703,9	26626,0

/ Besetzung hochgerechnet weniger als 5000 Fälle
Quelle: IAB-Datenpool VII/4

Notes to Table A3
Translation of German terms:

SECTOR

1. agriculture, forestry, fishing
2. electricity, gas, water, mining, quarrying
3. intermediary industries
4. steel, machines, vehicle construction
5. electrotechnics, fine mechanics, optical ind.
6. consumer good industry
7. food industry
8. construction
9. trade
10. private transport
11. postal service, railway
12. financing, insurance
13. private services mainly
14. research, education, sports
15. arts, media, publishing
16. health, veterinary
17. consulting, architecture, engineering
18. non-profit organizations, private households
19. public sector, social insurance
20. not stated (1976)

QUALIFICATION

without formal training:
- not in apprenticeship
- apprentices

completed apprenticeship/vocational training
completed TTS-training
completed Fachhochschul-training
completed university training
total

Table A4
Main activity performed
by employed HE graduates (1987)

activity	Qualification			
	TTS	Fachhoch-schulen	univer-sity	total labour force(1)
regulating/positioning of machines	7,9	3,7	1,1	8,7
producing, manufacturing, extracting	17,6	3,7	1,4	20,3
repairing, restauring	9,5	0,8	0,2	6,3
trading, distribution	7,9	5,1	3,8	10,4
clerical work	12,1	17,5	7,0	16,6
research, development	11,7	25,6	10,6	5,0
management, planning	12,6	22,2	13,0	5,9
general service activit.	3,8	1,2	0,9	13,4
caring, consulting, teaching	16,9	20,4	61,9	13,5
total	100,0	100,0	100,0	100,0
total (1000)	1983,1	979,7	1794,9	25413,6

(1) excl. apprentices - source: microcensus/IAB

Table A5
The intention of Abiturienten to enter higher education, by gender

year	male			female			total		
	intention to study	indecisive	no intention	intention to study	indecisive	no intention	intention to study	indecisive	no intention
1971	88,1	7,7	4,2	85,8	6,5	7,7	87,2	7,2	5,6
1975	81,1	12,5	6,4	75,2	12,1	12,7	78,8	12,4	8,8
1976	78,7	15,3	6,0	70,4	15,5	14,1	75,3	15,4	9,3
1977	76,2	17,2	6,6	67,8	16,6	15,6	72,7	16,9	10,4
1978	72,6	19,1	8,3	64,7	17,5	17,8	69,3	18,4	12,3
1979	71,0	21,5	7,6	62,4	21,7	15,9	67,4	21,6	11,0
1980	72,5	20,9	6,6	63,0	21,8	15,3	68,3	21,3	10,4
1981	73,3	20,5	6,2	63,1	22,3	14,6	68,7	21,3	10,0
1982	73,6	20,3	6,2	59,2	23,9	16,9	67,1	21,9	11,0
1983	69,9	22,1	8,0	53,4	25,4	21,3	62,5	23,6	13,9
1984	67,2	23,4	9,5	49,6	26,6	23,8	59,2	24,8	15,9
1985	66,7	23,0	10,3	49,1	25,6	25,3	58,6	24,2	17,2
1986	67,2	23,0	9,8	49,6	26,1	24,3	59,1	24,4	16,5
1987	69,0	22,3	8,7	52,4	25,7	22,0	61,4	23,8	14,7
1988	71,1	21,5	7,5	55,4	25,6	19,1	64,0	23,3	12,7
1989	72,3	20,4	7,3	57,1	24,4	18,5	65,5	22,2	12,3
1990	72,9	19,9	7,2	59,9	22,8	17,2	67,0	21,2	11,8

1) leavers from grammar schools, specialised grammar schools and other leavers with an entrance qualification for Higher Education (universities, Fachhochschulen)
source: Central Statistical Office; Federal Ministry of Education and Science

Table A6
Destinations of Abiturienten

Year	total leavers (in 1000)	direct transition to: (in %)					
		apprenticeship training	vocational schools	initial training (2+3)	higher education (1)	work, military service	other destinations (2)
	(male)						
1975	59.4	4.4	0.8	5.2	42.7	45.6	6.5
1980	78.4	9.8	0.5	10.3	32.0	54.0	3.7
1981	91.2	9.8	0.7	10.5	28.8	54.7	6.0
1982	98.6	11.4	0.9	12.3	28.4	53.9	5.4
1983	103.8	11.9	0.9	12.8	29.6	52.9	4.7
1984	104.0	14.0	1.0	15.0	25.8	55.4	3.8
1985	104.2	16.5	1.0	17.5	21.1	57.7	3.7
	(female)						
1975	50.0	5.4	1.2	6.6	72.9	9.6	10.9
1980	73.0	8.1	1.9	10.0	55.0	12.3	22.7
1981	89.3	9.8	2.0	11.8	50.4	12.5	25.3
1982	97.3	13.6	2.3	15.9	46.9	12.6	24.6
1983	103.2	15.9	2.4	18.3	38.1	13.1	30.5
1984	106.1	18.9	2.1	21.0	34.8	14.2	30.0
1985	105.2	19.8	2.6	22.4	33.5	15.4	28.7
	(male and female)						
1975	109.4	4.8	1.0	5.8	55.9	29.1	9.1
1980	151.5	9.2	1.2	10.4	42.5	33.8	13.3
1981	180.6	10.7	1.5	12.2	39.0	32.7	16.1
1982	195.9	12.5	1.9	14.4	37.0	33.7	14.9
1983	207.0	14.3	2.1	16.4	34.1	32.5	16.9
1984	210.1	16.7	1.7	18.4	30.5	34.4	16.7
1985	209.4	18.9	2.1	21.0	26.9	36.3	15.8

1) universities, Fachhochschulen 2) incl. unemployment, emigration etc.
source: IAB-Educational Accounts

Table A7
New entrants to higher education
(universities and FHS)

year	total entrants (1000) 1)	of which in : (%)							
		Languages, Arts, Sports	Jurispr., Economics, Social Science	Mathematics, Science	Engineering	Medical Science, Veterin. Medicine	Agriculture, Oecotrophology	Art	teacher training
		universities, academies of art							
1975	122.8	12.2	19.0	13.6	11.8	4.7	1.8	3.8	32.9
1980	138.7	16.8	22.8	14.3	11.1	7.9	2.7	3.4	20.8
1985	144.2	21.5	24.5	19.3	13.5	6.7	2.7	3.9	8.0
1988	172.8	17.8	28.4	17.9	13.1	6.7	2.0	3.2	10.9
		Fachhochschulen							
1975	43.8	2.1	34.7	2.3	52.7	-	3.7	4.6	-
1980	56.3	1.2	47.2	3.0	41.0	-	3.4	3.9	-
1985	63.4	1.4	40.7	4.7	46.4	-	3.6	3.2	-
1988	73.4	1.4	40.1	5.9	46.7	-	3.4	2.5	-
		universities and Fachhochschulen							
1975	166.6	9.5	23.1	10.6	22 6	3.5	2.3	4.0	24.2
1980	195.0	12.3	29.8	11.1	19.7	5.6	2.9	3.5	14.8
1985	207.6	15.4	29.4	14.8	23.5	4.6	3.0	3.7	5.5
1988	246.2	12.9	31.9	14.3	23.1	4.7	2.4	3.0	7.6

1) incl. no response
Source: Central Statistical Office; Federal Ministry of Education and Science

Table A8
Graduates from higher education

year	university (diploma)	doctorate	teacher	Fachhochschule
1973	32,3	10,1	30,0	29,2
1974	33,6	10,7	33,2	30,1
1975	33,7	11,4	40,4	31,9
1976	36,5	11,5	42,5	29,3
1977	37,5	11,4	40,4	33,3
1978	39,8	11,8	38,5	30,8
1979	42,8	11,9	33,2	34,1
1980	46,3	12,2	30,5	34,7
1981	46,9	12,3	27,4	35,4
1982	50,6	13,0	27,8	39,7
1983	54,8	13,7	27,4	41,9
1984	57,2	14,1	25,6	44,6
1985	61,1	15,0	22,9	48,0
1986	63,9	15,5	20,4	50,4
1987	69,3	16,0	16,7	52,8
1988	74,5	17,3	13,7	53,7

source: Federal Ministry for Education and Science

Table A9
Females' share
in education and training enrolments

institution	1960	1965	1970	1975	1980	1985
GENERAL SCHOOLS						
Primary/Secondary Schools	49.3	49.2	49.0	48.4	47.7	47.7
Schools for the Handicapped	40.0	40.4	40.3	39.9	39.4	38.8
Intermediate Schools	52.0	51.5	52.9	54.0	53.6	53.0
Grammar Schools	39.9	41.3	43.9	47.9	50.1	50.5
Comprehensive Schools	-	-	-	48.3	48.2	47.5
VOCATIONAL TRAINING						
Vocational Schools	68.4	63.2	60.7	66.4	66.3	65.8
Vocational Extension Schools	-	25.3	32.6	28.5	34.7	35.4
"Fachoberschulen"	-	-	20.4	26.7	32.5	31.2
Specialised Grammar Schools	-	-	33.8	39.5	41.5	41.3
Health Schools	90.9	88.9	88.9	83.7	86.0	86.4
APPRENTICESHIP TRAINING	35.9	36.4	35.3	35.4	38.2	40.6
HIGHER EDUCATION						
Trade & Technical Schools	42.2	43.7	39.4	39.5	44.8	46.7
"Fachhochschulen"	.	.	16.0	23.0	29.5	28.9
Universities	26.7	27.3	30.9	36.0	38.4	40.5

Source: IAB-Educational Accounts

Table A10
Female Abiturienten and leavers from apprenticeships

year	female grammar school leavers (1)		female apprenticeship leavers (1)	
	1000	% (2)	1000	% (2)
1970	91,5	39,4	.	.
1975	175,0	39,9	.	.
1980	221,7	45,4	567,3	45,9
1981	258,4	46,4	603,4	45,9
1982	286,3	46,3	620,4	46,2
1983	305,7	46,4	616,4	46,7
1984	305,0	46,9	604,8	47,1
1985	298,9	47,4	632,5	47,6
1986	291,4	47,4	675,0	48,1
1987	290,6	47,2	680,1	48,7

1) incl. specialised grammar schools and other vocational schools - 2) % of male+female leavers
source: Central Statistical Office; Federal Ministry of Education and Science

Table A11
Females' share among new entrants to higher education

year	total entrants (%)	of which in :							
		Languages, Arts, Sports	Jurispr., Economics, Social Science	Mathematics, Science	Engineering	Medical Science, Veterin. Medicine	Agriculture, Oecotrophology	Art	teacher training
		universities, academies of art							
1975	41.1	54.5	30.0	29.1	7.8	34.5	41.5	54.8	58.8
1980	43.4	59.2	34.9	33.2	9.0	40.9	42.7	52.4	64.9
1985	43.5	65.1	38.8	33.5	10.0	44.8	47.1	59.3	69.8
1988	43.7	65.2	39.5	32.5	10.8	44.8	46.7	59.2	71.6
		Fachhochschulen							
1975	24.1	66.3	41.8	22.3	8.4	-	32.6	53.7	-
1980	31.8	73.8	51.4	27.4	12.0	-	40.1	57.6	-
1985	31.2	77.4	51.4	22.4	12.4	-	45.6	56.7	-
1988	30.9	79.0	50.2	25.5	12.3	-	44.4	56.5	-

1) incl. no response
Source: Central Statistical Office; Federal Ministry of Education and Science

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AUSTRALIE

AUSTRALIA

This text is drawn from the contribution from Australia to the parallel project "The Case of the Humanities and Social Sciences". It has been written by **Sir Bruce Williams**, former Vice-Chancellor, University of Sydney, Consultant to the National Board of Employment, Education and Training, Canberra, Australia.

EMPLOYMENT PROSPECTS FOR GRADUATES IN AUSTRALIA

There have been major changes in the Australian system of higher education since the publication of the Commonwealth Government's policy discussion paper Higher Education in 1987 and its policy statement Higher Education in 1988.

Following the report of the Martin Committee, which had been appointed by the Commonwealth Government in 1961 to consider tertiary education in relation to the needs and resources of Australia, a binary system of higher education was established. The committee recommended a major expansion in participation rates in higher education, but judged it unrealistic to think that the Universities could provide for the necessary range of abilities, interests and motivations that the planned expansion implied. It proposed that by 1975 approximately half of the much larger numbers of higher education students should be in universities and half in non-university institutions.

The broad outlines of the proposals of the Martin Committee were adopted by the Commonwealth & State Governments. The non-university institutions become Colleges of Advanced Education or Institutes of Technology, and by 1975 the number of students and their distribution between the two sectors were close to those proposed by the Committee. The plan was that the Colleges and Institutes would be teaching institutions which would provide a broad range of sub-degree vocational courses, while the Universities would abandon sub-degree courses and concentrate on first and higher degree courses and research. However from the late sixties the Colleges and Institutes were empowered to give the degrees of Bachelor and Master, though they were required to maintain their emphasis on vocational courses.

During the nineteen seventies and eighties the differences between the two sectors were gradually reduced. In 1989 there were still substantial differences between the two sectors -- the universities were financed to teach and research and attracted almost all of the grants of the Government's Research Councils, the proportion of postgraduate students in the College sector was around one tenth of the proportion in the university sector, and while sub-degree students in the universities were less than 1 per cent in Colleges there were about 30 per cent -- but there were strong pressures from the Colleges and their political supporters to end the binary system. Two Institutes of Technology had been granted university status, one Institute and one College had gained the power to give Ph. D degrees in fields not available in universities, and in fields such as engineering, accountancy and social work, where both Universities and Colleges accomodated the views of professional associations on curricula, because recognition of their degrees is important for the employment of their graduates, first degree courses had drawn closer together.

The decision to end the binary system and to reduce the number of institutions of higher education is so recent that it is not possible to say how what is called "the unified national system" will affect courses, the distribution of students between the main disciplines, and the employability of graduates.

The Universities that were in existence before the change in the system have become more dominant parts of the system. In Queensland, New South Wales, Victoria and Tasmania, where the arrangements for amalgamations are almost complete, the number of their students has been increased by 50 per cent.

New universities formed from the amalgamation of former Colleges and Institutes in the advanced education sector will have just under 30 per cent of the total, whereas before the change students in the Advanced Education sector were a little over 50 per cent. Whether that will lead to a decline in the more directly vocational courses in the humanities and social sciences will depend on policy in the universities in which former Colleges of Advanced Education and Institutes of Technology have been incorporated, and on the way in which the provisions for educational profiles -- agreements between the Commonwealth Government and institutional members of the unified national system -- are administered.

Policy in the expanded universities may vary with the nature and location of the Colleges and Institutes that they have incorporated. Where such Colleges and Institutes bring fields of study not previously provided in the university -- e.g. paramedical studies and performing arts -- and are located some distance away, there may not be much change in courses offered. Where however there is not an extension in the range of studies and the former Colleges or Institutes are nearby -- e.g. former Teacher Education Colleges -- the traditions and current practices in the University Faculties may be generalized.

If the Minister judged that the range of courses and the degree of emphasis on vocational relevance that characterized courses in the advanced education sector were being significantly reduced, it would be possible for him to extend the range and restore the emphasis on vocational relevance by changing the educational profiles required for Ministerial approval, or by a closer monitoring of programs after the Minister and the Universities had reached their agreement on the profile that would provide the basis of government grants.

Fields of Study

The distribution of higher education students between the broad fields of study in 1979 and 1989 is shown in Table 1. The percentage of the first three fields of study that are often grouped as "the humanities and the social sciences" (H & SS) were 44.4 per cent in 1979 and 46.5 per cent in 1989. The percentage in the first group fell by 10 per cent, and that in Business/Administration/Economics rose by just over 30 per cent. The marked fall in the percentage in Education explains a considerable part of the rise in the second group, as Colleges that had specialized in Education diversified into the fields of Business and Administration.

The levels of courses in the different fields of studies is shown in Table 2. The outstanding feature of this table is the high percentage of sub-degree students in Education, Agriculture and Health/Medicine. That is explained by traditions in the preparation of school teachers in the Colleges of Education that become Colleges of Advanced Education, by practical farm courses in the Agricultural Colleges and by para-medical studies (notably Nursing -- a late arrival from Hospital training schemes to the formal higher education system) in other Colleges.

Course completions are shown in Tables 3 & 4. In Table 3, course completions are shown for the two sectors of higher education for 1981 and 1986 when there were published statistics for the two sectors, and 1988 when there were not. In 1981 completions in the H & SS group were 37 per cent of the total, and in 1988 they were 41 per cent. In 1987 students completing degrees in the H & SS group were 48 per cent of the total, and also 48 per cent of the total of Bachelor degrees.

Table 5 compares Bachelor degree enrolments in 1967 when only universities provided degree studies, and 1989. Between 1967, when enrolments were 78 825, and 1989, when they were at 305 447 almost four times greater, the percentage of students in the Humanities and Social Sciences rose by a percentage point only, though the percentage of business/administration and economics in that group rose from 24 per cent to 45 per cent. That was one of the main effects of the introduction of degree studies in the Advanced Education Sector. The other main effect was the increase in Education from 3.6 per cent to 9.3 per cent. Whereas in the Universities most of the intending teachers took a degree in Arts, Economics or Science and then a post-graduate Diploma in Education, in the Colleges of Advanced Education the education component and the other subject studies were all part of a Bachelor of Education Degree. Combining the Health and Medicine percentage disguises a major fall in Medicine and Dentistry which were 9.2 per cent of the total in 1967 but only half that in 1989 as a consequence of restrictive quotas which at the urgings of Health Authorities reflected predicted needs for Doctors and Dentists.

Bachelor degree enrolments, and graduations, rose at a greater rate than the labour force. In 1971 members of the labour force with at least a first degree were 2.4 per cent of the employed population. By 1988 that percentage had risen to 10.3, though not all of that increase was due to graduations from the higher education system in Australia. The migration of graduates from other countries contributed significantly to the rise in the percentage of graduates in the labour force.

There is not sufficient information on foreign graduates in the labour force to make possible reasonably accurate estimate of how much their fields of graduation differ from those of Australian graduates. Migration policy has been more encouraging to graduates in engineering and science than in other fields, and that probably reduced the graduates in the H & SS group in the labour force below the 53 per cent and 54 per cent of Australian graduations in that field. A further adjustment is needed for the graduates not in the labour force. In 1987, 23 per cent of female graduates were not in the labour force, compared with 11 per cent of the male graduates (Labour Force Status & Educational Attainment in Australia ABS, February 1987).

Necessarily rough adjustments for the greater percentage of female graduates not in the work force and for the fields of graduation of Australian females and immigrants bring the proportion of graduates in the H & SS group in the labour force to a little below 45 per cent.

Prospective Changes

The percentage of Australian children who completed secondary education did not reach thirty until 1971. The percentage rose to thirty five in 1975, to fifty three in 1987, and is expected to rise to sixty five before the mid nineties. Given that the percentage of those completing secondary education who proceed to higher education has been stable at around forty, it seems likely that there will be (at least) a corresponding increase in the proportion of the relevant age group who enrol in higher education.

In the absence of substantial increases in immigration, the numbers in the relevant age group will however fall by 10-12 per cent during the first half of the nineteen nineties and not recover to the earlier levels for another 7 or 8 years. The Australian Government's target (given in its Green Paper, Higher Education, issued at the end of 1987) of a 25 per cent increase in enrolments in higher education between 1986 and 2001 depends not only on the planned increase in school retention rates but also on the projected continued increase in the size of the population age 25 and over. Enrolments in higher education of those in that older age group rose to 42 per cent of total enrolments by the mid eighties, and though they declined to 38 per cent by the end of the eighties, the enrolments of mature age students are expected to increase substantially.

Significant margins of error attach to labour force projections even 10 years ahead, particularly in countries such as Australia where the migrants entry to the labour force is both considerable and variable. What at this time seem like reasonable projections put the labour force in 2001 at around 25 per cent higher than in 1986. The projected percentage increase in the labour force is therefore the same as the Government's target increase in enrolments in higher education.

It does not follow from the similar projected increases in enrolments and in the labour force that graduates as a percentage of the labour force will remain constant. Excepting the 15-24 age group, the percentage of graduates in the later age groups has been rising. In the 25-34 age group it rose from 10.2 to 11.7 per cent between 1982 and 1987, in the 35-44 age group from 8.2 to 10.5 and in the 45-54 age group from 5 to 6.5 per cent. If graduation rates remain the same as in recent years and the labour force and enrolments are as projected, graduates as a percentage of the labour force will rise from 10.3 in 1988 to around 13 by 2001. That was the percentage reached in Japan in 1980 and in Canada in 1981 though very little more than two third of the US percentage in 1981 (as reported in Human Capital and Productivity Growth, EPAC, Canberra, 1986).

The implication of those projections is that within the graduates in the labour force the percentage of H & SS graduates is likely to increase beyond the (estimated) 45 per cent at the end of the nineteen eighties. Because of the

demographic changes referred to earlier, the graduations in Education are not likely to rise significantly, and as a proportion of the growing number of graduations are likely to fall. In recent years, trends in the choice of school subjects have raised serious doubts about the capacity of universities to enrol a sufficient number of students with reasonable chances of success in the sciences and technologies to maintain the proportion of graduations in those fields. Government plans to increase the number of teachers of maths and science, to improve the teaching of maths and science, and to persuade more females with the relevant academic qualifications to enrol in science (in addition to biology) and engineering, may check the recent tendency to a small reduction in the proportion of students in the sciences (other than biology) and the technologies.

Another factor likely to be of significance in raising the proportion of graduates in the H & SS group in the labour force is the projected increase in the labour force participation rates of females, particularly in the 25-34 and 35-44 age groups. That projected increase in labour-force participation rates includes graduates and at least until the end of the century is likely to bring a significant increase in the proportion of H & SS graduates in the graduate labour force.

The combined effect of these three factors seems likely to increase H & SS graduates to 6-7 per cent of the labour force by the end of the century.

The Employment of Graduates

Unemployment rates in Australia were low in the nineteen sixties and early seventies. The rates rose during the second half of the seventies and early eighties. Unemployment rose to 8.5 per cent in 1982, peaked at 9.9 per cent in 1983, and fell to 8.1 per cent by 1988. The unemployment percentage for graduates was 46 per cent of the general rate in 1982, 51 per cent in 1983 and 46 per cent in 1988. Rates of unemployment were only a little less for men than for women, but the unemployment rates of male graduates were distinctly lower than for female graduates. In 1983 3.6 per cent of male graduates and 8.1 per cent of female graduates were unemployed and in 1988 the respective percentages were 2.6 and 5.4.

There is no reliable statistical series on unemployment by types of degree. However there is such information on the employment of new graduates 4 to 5 months after the completion of their final examinations by the Graduate Careers Council of Australia. The unemployment rate of new graduates so soon after graduation is of course considerably higher than the rate for all graduates, but as the annual fluctuations in the two rates are similar, the Graduate Careers Council's statistical series provides valuable information on the relations between the supplies of and the demands for graduates from the different fields of study. The Graduate Careers Council also publishes the results of its surveys of the fields of employment of new graduates from 11 broad fields of study.

This published information on employment is complemented by information on the starting salaries of new graduates compiled by the Careers and Appointment Service of the University of Sydney in association with the Graduate Careers Council.

Table 6 records the activities of new First Degree Graduates seeking full-time work in 1984 and 1988. In 1984 when the general unemployment rate at the end of April was 9.4 per cent and the general underemployment rate 2 per cent -- just below the peak rates of 1983 -- the unemployment rate for new male graduates at the end of April was 7 per cent and the underemployment rate 5 per cent. For new female graduates the unemployment rate was 9 per cent and the underemployment rate 13 per cent. By 1988, when the general unemployment rate at the end of April had fallen to a little below 8.0 per cent and the underemployment rate was still around 2 per cent, the unemployment and underemployment rates for male graduates were down to 4 per cent and 3 per cent respectively and for female graduates to 5 per cent and 9 per cent.

The report of the Graduates Careers Council for 1988 gives the greater concentration of females in "the less directly vocational fields of study" as a strong contributory factor in the higher unemployment and underemployment rates for new female graduates than for male graduates. In recent years the percentages of male students enrolled in Bachelor degree Courses in Arts, Humanities and Social Studies has been around 17 per cent of Bachelor enrolments whereas the percentage for female students was twice as high. Graduates from the less directly vocational courses may only take longer to get placed in full-time employment, and that possibility will be considered below.

Changes in the percentages of employment in the government, private, and teaching sectors provide evidence of quite rapid adjustments by employers and new graduates, most notably in the growth of full-time employment in the private sector in that short period from 24 per cent to 30 per cent. The growth in employment in industry and commerce of graduates in "non vocational" or generalist areas has been strong throughout the eighties.

The significant rise in full-time employment in the government sector (other than teaching) from 18 per cent to 22 per cent -- from 15 to 21 per cent for new female graduates -- is partly explained by the rapid growth of bachelor degree courses to replace diploma courses, and qualifications in e.g. nursing previously provided outside the higher education sector in health and related fields.

Information on the employment of new graduates in the Graduate Careers Council's selected fields of study is given in Table 7. A high percentage of graduates from directly vocational fields of study such as Accounting and Pharmacology were in full employment very soon after graduation, as were graduates in Computer Science after 1984. But less than 90 per cent of graduates were in full employment in Civil Engineering in 1984 and 1987, and in Electrical and Mechanical Engineering in 1984 and 1985, and in Social Work and Education in all years. In Psychology which is less directly vocational than Engineering but more so than Humanities for those not intending to teach, the percentages of graduates in full employment was little higher than that of graduates in Humanities.

The strength of demand for new graduates has a considerable influence on new enrolments. In directly vocational fields such as Chemical, Civil, Electrical and Mechanical Engineering the level of demand for the new graduates in the year after graduation has a considerable effect on the quality of entry in the following year, and in turn on graduation rates 4-5 years after that. In

the Australian system, where the migration of engineers has a considerable influence on the number of engineers in the labour force and where there are entry quotas in the large engineering schools, a reduction in the demand for engineers affects later graduation rates rather than current enrolments. Enrolments in Education, particularly enrolments in Bachelor of Education courses, are much more directly affected by the demand for new graduates as can be deduced from the marked decline in the percentage of enrolments in Education between 1979 and 1989 (Table 1). That sharp decline was due mainly to the dominance of State Departments of Education as employers of teachers and the influence of their estimates of needs on the attitudes of school leavers, the diversification of former Teacher Colleges into the provision of vocational courses in "business" and "administration", and the general view that employment prospects would be better in courses that included instruction in computing techniques, contributed to the growth of enrolments in the business/administration/economics groups, as well as in computer science courses within Faculties or Schools of Science.

Starting Salaries

In 1977 the starting salaries of graduates were equal to the average earnings of the labour force. Between 1977 and 1984 there was a steady fall in the starting salaries of graduates to 87.8 per cent of average earnings. After 1984 the starting salaries of graduates gradually increased to 92.4 per cent of average earnings. In 1988 the median starting salary of male graduates was 95.6 per cent of average earnings and of female graduates 89.2 per cent.

Between 1977 and 1988 when graduations increased by approximately one third and graduates as a percentage of the labour force doubled, the real starting salary of a graduate fell by 3 per cent.

In 1988 the median starting salary of bachelor degree graduates in full time employment was $23 000, with a range from $30 700 in Dentistry to $15 900 in Pharmacy. Graduates from the directly vocational subjects ranged from salaries of $30 700 in Dentistry and $28 000 in Medicine, through $24 800 in Engineering, $23 000 in Veterinary Science, $22 900 in Accounting and $22 500 in Education, to $21 100 in Law, $19 400 in Architecture and $15 900 in Pharmacy. The median starting salaries in the semi-vocational subjects of Economics and Psychology were $22 500 and $21 700 respectively, and in Humanities and other Social Sciences $21 300 and $21 500.

In the "Humanities and Social Sciences" group as defined earlier, the median starting salary was $22 000, which was $1 000 below the median starting salary for all bachelor degree graduates in full time employment.

Fluctuations in salary relativities are shown in Table 8. The greatest fluctuations were in Social Work, Veterinary Science, Earth Sciences, Maths and Physical Sciences. Fluctuations in rankings were much more obvious than trends in ranking. There was however a reduction in the range of relativites between 1977 and 1988. The smallest increases were in Dentistry, Medicine and Social Work (which were ranked 1, 2 and 3 in 1977) and the highest in Law, Earth Sciences and Accounting (ranked 20, 8 and 17 in 1977).

One clear trend over the period 1977 to 1988 was the rise in salaries paid in the private professional practice, and industry and commerce sectors, relative to the salaries paid by employers in the government and education sectors. From 100 in 1977 the index of starting salaries paid by employers in professional practice rose to 273 and in industry and commerce to 251, but in government to 231 and in education to 224 only.

In that same period the percentage of new graduates in the General Careers Council's sample employed in industry and commerce grew from 25 to 39 per cent and in professional practice from 16 to 21 per cent, while the percentage employed in government and education fell from 38 to 28 per cent and from 20 to 9 per cent.

From 1977 to 1988, general unemployment averaged 7.5 per cent. In that context the employment of such a high proportion of an increasing number of graduates was an indication of the strength of demand for graduates and of the responses of students to the types of employment available or likely to be available. An increasing proportion of graduates were employed in areas of employment which were once regarded as "non-graduate jobs" by both graduates and employers, and that doubtless had an influence on the starting salaries of graduates. But the apparent influence of "manpower absorption" -- i.e. the employment of graduates instead of school leavers because the pool of school leavers of ability had been progressively reduced by increased participation rates in higher education -- was not confined to "generalist" graduates from within the Humanities and Social Sciences group.

The median starting salaries of graduates fell relative to average weekly earnings between 1977 and 1984, and although relative starting salaries rose thereafter they had not recovered to the levels of 1977. In 1988 the median starting salaries in the humanities and social sciences (other than those in the business/administration economics group) were 7 per cent below those for all graduates, but they were similar to those in the Biological Sciences and above those in Pharmacy.

The growth in median starting salaries between 1977 and 1988 was highest in Law, Earth Sciences and Accounting. The growth in Economics was similar to the growth in Maths, Computer Science, Engineering and the Physical Sciences, while the growth in Humanities and other Social Sciences was similar to the growth in the Biological, Agricultural and Veterinary Sciences and Pharmacy. The growth was least in Dentistry and Medicine.

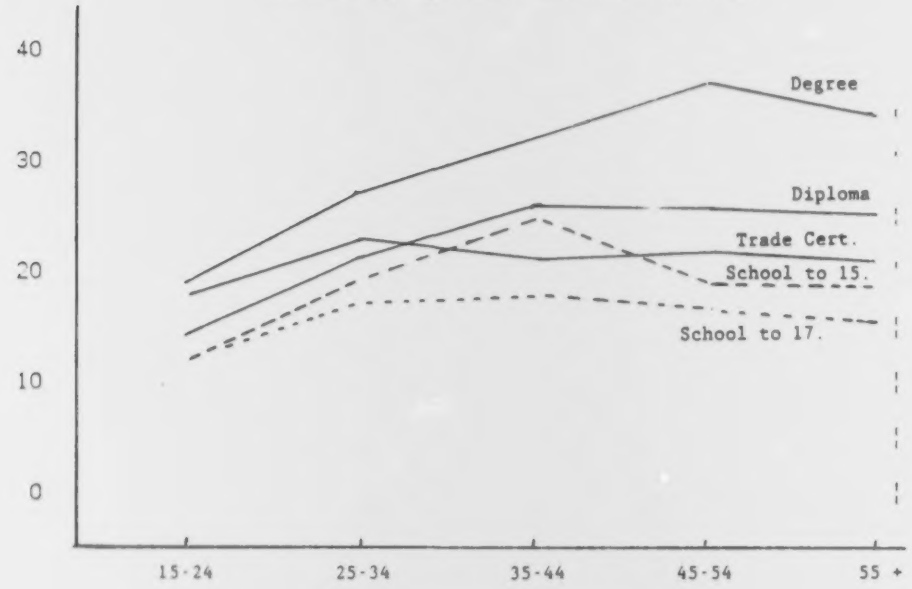
The view that there should have been a higher proportion of graduates in engineering and science was not given strong support by either the relative starting salaries or the changes in relative starting salaries between 1977 and 1988. The market signals to encourage such a change were certainly not strong.

Later Salaries

That the starting salaries of graduates increased less between 1977 and 1988 than average weekly earnings does not imply that the salaries of graduates in the labour force increased less than average weekly earnings. Earnings

classified by age and educational qualifications derived from the 1985-1986 Income Distribution Survey conducted by the Australian Bureau of Statistics are summarised in the chart below.

Income by age and education ($1000)



Nor are the relative starting salaries of graduates from the various disciplines a good guide to relative salaries after some years of employment. That is particularly the case for graduates in fields such as architecture, law and pharmacy where starting salaries are depressed by the period of training after graduation required for professional status.

The Careers and Appointments Service of the University of Sydney conducted a survey of 1979 graduates from 6 universities after five years in the labour force The median starting salaries in 1979 in the different fields of graduation differed significantly from their median salaries by field of graduation in 1984.

The changes in rankings are shown in Table 9. Medicine and Dentistry remained in the first two positions. Most of the H & SS Group gained significantly in rank -- law from 20 to 3, economics from 12 to 7, accountancy from 15 to 9, humanities from 16 to 10 and other social sciences from 17 to 11. Psychology stayed at 14, but Social Work fell from 7 to 17. The median salaries of the H & SS group rose considerably more than those in Education, Physical Sciences, Agriculture and biological sciences which lost rank respectively from 4 to 15, 8 to 13 and 13 to 18. Engineering and Computer Sciences lost rank a little, but along with earth sciences which gained rank, their median salaries were still a little above those in Economics and Accountancy.

Employment Opportunities

The author of Graduate Starting Salaries 1988 observed that jobs for those graduates in the H & SS group who had not taken vocational courses "had not been difficult to find", though because competition for their services was not as marked as for other more directly vocational disciplines their starting salaries were low. To judge from the survey of earnings of 1979 graduates in 1984, they either displayed skills that their employers had not expected or they soon developed them on the job.

In a note by the OECD Secretariat on the changing relationship between higher education and employment in the humanities and social sciences, it is argued that the growth of service occupations and orientations in the economy are of particular importance to H & SS graduates because first, the demographic changes and economic policies have reduced their traditional outlets in teaching and other forms of public sector employment, and second, the low employment value of H & SS degrees has reduced the quality of students entering them, so exacerbating the downward spiral of status and resources. In Australia changes in demography and economic policies have reduced the traditional employment for H & SS degrees in teaching and other public sector employment, but the employment value of H & SS degrees has been in the middle of the range and there is no evidence that it has reduced the quality of students entering them, though there has been an increase in the more directly vocational subjects in demand within the H & SS disciplines.

The distribution of employment between government and local authority departments and authorities, education, private professional practice, and private sector employment in primary and secondary industry and services is shown in Table 10. The fields of employment were not classified in a way that makes possible a clear separation of primary, secondary and tertiary activities. Some of the activities of Commonwealth and State authorities are industrial and some of "private professional" activities of engineering and science graduates are the provision of designs to industrial firms which in other firms is provided "in house" and classified as industrial. However it is clear that apart from engineering the great majority of graduates were employed in tertiary activities. It is worth noting that the percentage of science graduates in primary and secondary fields of employment was only 33 even if, as is unlikely, all their employment in commonwealth and state authorities was in those fields, and that the proportion of them in the sample employed in education and in private sector tertiary activities was similar to the proportion of "arts/humanities/social science" graduates in those fields.

In 1986 when for OECD as a whole 6 per cent of civilian employment was in agriculture, 30 per cent in industry and 64 per cent in services, the Australian percentages were 6.1, 26.8 and 67.1 respectively. Details of the distribution in 1990 are given in Table 11. At that time agriculture and mining provided 6.7 per cent of employment, industry 24.8 per cent and services 68.5 per cent. It follows of course that the main opportunities for graduate employment are in services. In 1987, as shown in the final column of Table 11, 3.1 per cent of graduate employment was in primary, 12.1 per cent in secondary, and 84.8 per cent in services activities. Health and education

services provided for around 35 per cent of graduates, and finance, property and business services another 18 per cent. In both fields graduates are high percentages of employment (column 2 of Table 11), and these percentages have grown significantly in recent years -- in health services because of a trend towards graduate qualifications for para professionals and in education because of a policy shift towards graduate qualifications for primary school teachers, and in finance and business services because of the impact on the nature of work of micro-electronic technologies, and greater competition following deregulation of the financial sector from the early eighties.

The proportion of employment in services is not likely to rise in the next ten years, and may actually fall as the proportion of employment in secondary activities increases as a consequence of cyclical recovery and government measures to reduce balance of payments problems. But a fall -- which is not likely to be large -- in the proportion of employment in services need not check the further growth in the proportion of graduates in the employed labour force nor darken the prospects for the continued rise in the employment of H & SS graduates.

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Table 1

Higher education students in 1979 & 1989
(Percentages)

	1979	1989
Arts/Humanities/Social Science	25.7	23.0
Business/Administration/Economics	15.8	20.8
Law/Legal Studies	2.9	2.7
Education	25.0	16.5
Agriculture/Forestry	1.4	1.7
Architecture/Building	2.2	2.2
Engineering/Surveying	7.0	7.5
Health/Medicine	5.7	10.9
Science	13.3	13.6
Veterinary Science	0.5	0.4
Non Award	0.5	0.6
Numbers of Students ('000)	316.4	441.1

Notes:

i) Legal studies in the Advanced Education sector were included in Business/Administration/Economics.

ii) In most Universities it was customary for students intending to teach to do a degree in Arts, Economics or Science and then to do a postgraduate Diploma in Education, whereas in Colleges of Advanced Education they took a B.Ed degree (or sub degree Diploma or Certificate) in which the "teaching subjects" were mixed with the professional education component.

iii) The growth in the percentage in Health/Medicine was largely due to the shift of the training of nurses into the "higher education" sector.

Source: Department of Employment, Education & Training (DEET)

Table 2

Types of courses in the different fields of study, 1989

	Doctorate	Master	Diplomas	Bachelor	Sub-degree
Arts/Hum./Soc.Sc	2.0	4.7	5.4	81.7	6.3
Bus./Admin/Econ	0.4	5.8	7.2	81.4	5.3
Legal Studies	0.7	8.1	12.5	74.1	4.6
Education	0.7	5.8	22.7	39.5	31.3
Agric/Forestry	4.6	5.5	4.6	52.7	32.6
Arch/Building	0.7	6.6	8.5	81.4	2.9
Eng./Surveying	2.7	5.8	5.2	79.2	7.1
Health/Medicine	2.4	3.5	4.9	49.1	40.1
Science	4.4	3.9	7.0	78.5	6.1
Veterinary Science	9.0	5.9	1.3	83.8	0.0
Overall	1.9	5.1	9.0	69.3	14.8

Source: Selected Higher Education Statistics, DEET, 1989.

Table 3

Course completions in 1981, 1986 and 1988 by sector and field of study
(percentages)

	1981		1986		1988
	Adv.Ed	Univ	Adv.Ed	Univ	AE & U
Arts,Human & Soc.Sciences	13	31	15	30	22
Business Admin & Economics	13	12	17	14	15
Law, Legal Studies	-	5	-	6	4
Education	53	13	43	12	26
Agriculture & Forestry	2	2	2	1	2
Architecture & Building	2	2	2	2	2
Engineering, Surveying	4	5	6	7	6
Health, Medicine	6	7	6	6	11
Science	7	20	9	20	12
Veterinary Science	-	1	-	1	0.3
Not Stated	-	2	-	1	-

Source: Selected Higher Education Statistics, DEET 1989.

Table 4

Course completion by level of degree: 1987
(Percentages in each group)

	Ph D	Masters	Bachelors	Sub Degree
Arts, Humanities & Soc.Sc.	1	4	76	19
Business Admin & Economics	0.3	8	73	19
Law & Legal Studies	0.2	4	64	32
Education	0.2	2	37	61
Agriculature & Forestry	0.4	6	44	50
Architecture & Building	0.3	4	83	13
Engineering & Surveying	2	6	76	16
Health, Medicine	1	2	50	47
Science	4	4	77	15
Veterinary Science	6	6	88	-
Overall	1.2	4.0	61.3	33.4

Source: Selected Higher Education Statistics, DEET, 1988

Table 5

Bachelor degree enrolments 1967-1989

	1967 *	1989
Arts/Humanities/Social Science	35.6	27.1
Business/Admin/Economics	12.6	24.4
Law	5.1	2.8
Education	3.6	9.3
Agriculture/Forestry	2.0	1.3
Architecture/Building	2.7	2.6
Engineering/Surveying	9.8	8.7
Health/Medicine	9.2	7.7
Science	18.1	15.6
Veterinary Science	1.3	0.4
Numbers	78 825	305 447

* In 1967 University degree students only

Source: Tertiary Education Commission and DEET

Table 6

Activities of new first degree graduates seeking full-time work, 1984-1988
(percentages)

	Work Full Time			Work P.T. Seek F.T.	Unemployed
	Govt	Private	Teaching		
Males					
1984	22	35	30	5	7
1988	23	43	27	3	4
Females					
1984	15	16	46	13	9
1988	21	20	44	9	5

Source: 1987 Australian Graduates in 1988
(Graduate Careers Council of Australia)

Table 7

First degree graduates working full-time, as a % of those available for full-time work in Australia, 1984-1988

	1984	1985	1986	1987	1988
Accounting	92.8	95.8	98.2	97.7	97.1
Civil Engineering	88.5	91.6	92.0	87.8	91.6
Computer Science	81.9	97.1	95.2	96.3	94.7
Education	80.2	84.1	89.7	84.5	87.0
Electrical Engineering	83.9	88.3	95.5	94.5	90.7
Humanities	79.2	75.7	80.7	77.8	74.5
Mechanical Engineering	83.3	88.2	93.0	91.7	95.0
Pharmacology	93.3	94.1	97.6	97.9	98.6
Psychology	73.2	78.0	82.1	81.1	75.8
Social Work	82.8	87.9	89.9	89.6	88.0

Source: 1987 Graduates in 1988
(Graduate Careers Council of Australia)

Table 8

Disciplines ranked according to level of starting salary, 1977-1988

	'77	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88
Dentistry	1	1	1	1	1	1	1	1	1	1	1
Medicine	2	2	2	2	2	2	2	2	2	2	2
Earth Sciences	8	8	9	4	5	10	7	8	4	3	3
Optometry	-	-	-	-	-	-	-	-	-	-	4
Engineering	3	3	3	3	3	3	3	3	3	5	5
Computer Science	5	5	4	5	4	4	5	5	5	4	6
Mathematics	10	8	12	8	7	7	8	7	6	6	7
Paramedical	-	-	-	-	-	-	-	-	-	-	8
Veterinary Science	9	6	7	11	11	11	14	15	12	10	9
Physical Sciences	12	8	9	7	9	8	10	9	9	8	10
Accounting	17	15	17	17	14	14	14	16	16	11	10
Social Work	3	7	5	8	10	5	5	4	7	7	12
Education	6	4	7	6	6	5	4	6	8	9	13
Economics	15	12	13	12	12	12	11	14	13	13	13
Agricultural Sciences	7	8	5	10	8	9	8	10	11	12	15
Psychology	12	14	15	15	13	14	12	11	14	13	16
Biological Sciences	12	13	14	14	15	13	13	12	10	15	17
Other Social Sciences	9	17	18	15	16	17	16	18	15	16	17
Humanities	15	16	16	18	18	16	16	17	17	19	19
Art & Design	-	-	-	-	-	-	-	-	-	-	19
Law	20	20	20	20	20	19	19	19	19	17	21
Architecture	17	17	11	13	17	18	18	13	18	17	22
Pharmacy	19	19	19	19	19	19	20	20	20	20	23

Source: Graduate Starting Salaries 1988, (CAS, The University of Sydney & the GCC of Australia, 1989)

Table 9

Ranked salaries in 1984 of 1979 graduates compared with their starting salaries

	Salary in 1984	1984 rank	1979 rank
Medicine	$34,994	1	2
Dentistry	$33,050	2	1
Law	$27,400	3	20
Earth Sciences	$27,000	4	8
Engineering	$26,501	5	3
Computer Science	$26,250	6	5
Economics	$25,999	7	12
Veterinary Science	$25,300	8	6
Accounting	$25,002	9	15
Humanities	$25,000	10	16
Mathematics	$24,999	11	8
Other Social Science	$24,999	12	17
Agricultural Science	$24,966	13	8
Psychology	$24,500	14	14
Education	$24,224	15	4
Physical Science	$24,000	16	8
Social Work	$23,994	17	7
Biological Science	$23,002	18	13
Architecture	$22,506	19	17
Pharmacy	$21,017	20	19
All Graduates	$25,690		
Average Weekly earnings	$19,600		

Source: Graduate Starting Salaries 1988 (CAS, University of Sydney & GCC of Australia)

Table 10

First employment of 1987 graduates

	Arts/ H/SS	Bus/Ad/ Econ	Law	Educ	Eng	Science
Govt Depts & Local Gov.	24	14	19	4	12	14
Defence	1	1	-	1	4	1
Com & State Authorities	11	5	4	2	8	13
Education	19	3	3	88	2	18
Private Professional	4	29	61	0	15	5
Private Sector Tertiary	27	34	9	3	10	26
Private Sector Primary & Secondary	8	14	2	1	48	20
Private Unclassified	6	-	1	1	-	1

Source: 1987 Australian Graduates in 1988 (GCCA)

Table 11

Employment by sector of activity

	Employment per cent	Distribution of graduate	Graduates as per cent
Agriculture & Fishing	5.4	2.7	1.7
Mining	1.3	9.1	1.4
Manufacturing	15.5	5.1	8.5
Electricity Gas & Water	1.4	7.7	1.5
Construction	7.9	2.9	2.1
Wholesale & Retail Trade	21.0	3.8	7.9
Transport & Storage	5.0	3.8	2.1
Communication	1.7	4.7	0.9
Finance, Property & Business Services	11.7	17.1	18.0
Public Admin & Defence	4.5	15.2	7.6
Community Services *	17.1	25.7	45.2
Recreation, Personal & Other Services	7.6	4.4	3.1

* Community Services is dominated by Health (6.8 per cent of employment) and Education (6.6 per cent)

Source: Column 1 - The Labour Force Australia, February 1990 (ABS, 62030) & Labour Force Status & Educational Attainment Australia, February 1987 (ABS 62350)

AUTRICHE

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AUSTRIA

This study is composed of two parts. Part one, "Developments in Higher Education and the Changing Transition to the Labour Market", has been written by **Lorenz Lassnigg**, **Susanne Loudon** and **Hannes Spreitzer** (*Institut für Höhere Studien*); it is based on regular statistics and on a survey of graduates in 1988. Part two, "Employment and Labour Market Prospects of University Graduates in the Austrian Trade and Industry", has been written by **Klaus Schedler** (*Institut für Bildungsforschung der Wirtschaft*); it is based on a survey among Austrian enterprises.

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Part II

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Part I

DEVELOPMENTS IN HIGHER EDUCATION AND THE CHANGING TRANSITION TO THE LABOUR MARKET

I. CHANGES IN THE OUTPUT OF HIGHER EDUCATION

A. OUTPUT FROM UNIVERSITIES AND NON-UNIVERSITY INSTITUTIONS, 1977 to 1987

Over the last decade the number of university graduates has been sharply increasing, from about 5 400 to about 8 300, whereas the number of graduates from non-university institutions (NUI) has been decreasing, from 5 700 to about 4 700. In relative terms, an increasing share of persons from the corresponding age cohort graduated from university (5.2% in 1977, 6.2% in 1987); the share of persons who graduated from NUIs declined in this period (5.0% in 1977, 3.7% in 1987). In absolute numbers the overall output from higher education has been increasing from 11 100 to 13 000, in relative terms the output remained almost stable (from 10.2% to 9.9%). It should be mentioned that over this period the strongest age cohorts since the early fifties graduated from higher education.

A more detailed analysis shows that the distribution of university graduates by occupational categories (see Table 1 in the Annex to this report) has changed over this decade (the various occupational groupings that have been used are presented in the Notes at the end of this report; see Note 1). The number of secondary school teachers -- the largest category at the beginning of the period -- remained stable; however it now has the third rank. The numbers of graduates from studies geared to management or administration (business administration and law) and to the cultural system (humanities and the social sciences) show the strongest increases. They doubled over the period Strong increases can also be reported in health studies (medicine, pharmacy, veterinary: + 66%); and to a lesser extent in technology and the natural sciences (+ 30%).

The distribution of graduates from NUIs (Annex, Table 2) shows the prominence of the institutions for the training of teachers for compulsory schools. The number of persons graduating from these institutions has sharply decreased over the reference period (- 44%). Institutions for the training of health service personnel are ranking second with numbers of graduates increasing slightly; within the remaining occupational categories there are only very small numbers of graduates.

For the purpose of a more functional analysis, university degrees can be grouped into three main categories:

a) studies geared to the economy and public administration;
b) studies geared to the cultural system;
c) studies geared to the health services.

Comparison of the output of the courses within the first group (Annex, Table 1) shows a strong increase of business administration and law studies, a less strong increase in technology and agriculture studies, and an almost stable output of natural science studies. The latter were sub-divided into four groups on the basis of the distinction between "hard"(A)/"soft"(B), as

well as between teaching/non-teaching courses. The numbers in "non-teaching studies, sciences A" remained almost stable over the period. Within the group "non-teaching, sciences B", the output expanded rapidly.

Within the second group the output of teaching studies for secondary schools has by and large not being increasing, at least over the last years of the period. There is only one exception in which the numbers have gone up during 1979 to 1987, namely the studies preparing for the teaching of history and the humanities. Only in one of the study categories, the studies for "teaching, 'hard' sciences", is the output markedly lower. Studies in the humanities and the social sciences not leading to a teacher's degree are witnessing a strong expansion, mostly since the beginning of the eighties. Graduate numbers in the social sciences (sociology, psychology, communication, political science) have doubled over the period 1981-1987, from about 220 to about 450. Graduate numbers in history and language studies have also doubled.

The third group of courses mainly includes medicine, pharmacy and veterinary studies. Graduate numbers are comparatively small, ranging from 100 and 150 persons a year. Graduate numbers in medicine increased from about 800 to about 1400 between 1977 and 1983 and leveled off during the following years.

Within the NUI ten categories can be retained. Four of them cover institutions for the training of different categories of teachers. The largest category includes the institutions for the training of teachers for compulsory schools, with graduate numbers declining from a level of 3 200 to about 1 800 during this period. There are separate institutions for the training of teachers for the part-time vocational schools which are part of the apprenticeship system, then for the teachers of agricultural schools and for the teachers of religion. Graduate numbers of these institutions are much smaller compared with the training institutions for compulsory schools, ranging at a level between 100 and 400; these numbers have not changed much during the last decade. Institutions for the training of medical personnel bring about an output between 500 and 600 graduates; those institutions training social workers are smaller and bring about an output of 200-250 persons a year. Small but expanding numbers of graduates are leaving the technical *kollegs* (2), as well as the new institutions for tourism. There was a reform in the institutions providing training in the field of business administration, as a result there was a sudden decline in graduate numbers at the beginning of the eighties.

An analysis of a breakdown into more detailed categories would lead to the conclusion that the trends in graduate numbers are fairly well represented by the above broad categories. By and large a discussion of trends within more detailed categories would show similar results as these broader groupings.

The observed tendencies are to be traced back to the time of the beginning of the studies, when the definite choices were made. These time lags are different for university and NUI studies. Since the average length of university studies is approximately eight years, this means that we have to go back to the period between 1969 and 1979. Within NUIs, the course lasts only two or three years; therefore the period when definite decisions were made is from 1974 to 1984. It must be taken into account, however, that these decisions were developed previously. If we wish to find explanations for the change in output, we must look for causes in this period.

There are no proven explanations of the choices of particular studies. It is not very difficult to find plausible explanations for the stagnation or decline of graduate numbers from teacher's studies or, more recently, for the leveling off of medicine. Since the mid-seventies the decline in demand in these two fields was widely discussed in the public, as well as the employment difficulties of the new graduates. The increase in the number of graduates from courses in the humanities and the social sciences which do not lead to a teacher's degree can be at least partly explained as a substitute for teacher's studies.

On the other hand, it is not so easy to explain the development of enrolments in business administration, technology and the natural sciences. The strong increase in business administration was not foreseen and it took some time before it was recognised in the public and in the political area. On the other hand, there is a long-standing discussion on the demand for graduates in technology and the natural sciences in Austria. The complaint about a *Technikermangel* (a lack of technology graduates) has been a recurrent catch phrase since the late fifties in the Austrian debate. Despite these complaints it is not easy to find proven evidence for it; in addition, it is not easy to find clear and observable responses to this assumed shortage. Whether or not such a shortage exists, and whatever its causes, it is clear that it has not been possible to stimulate a stronger increase of output from these courses.

Attempts to forecast study choices have not been successful in the past. The author of the *Hochschulplanungsprognose* summarises the problem as follows:

> "Assumptions about the choice of a field of study by new entrants are the part of higher education planning prognosis which is most exposed to uncertainties. Only the consequences of the changing composition of new entrants by gender and previous education can be estimated with some degree of certainty. New entrants' choices are characterized by strong variations, cyclical developments and sudden ruptures of trends. Neither the extrapolation of trends, nor the assumption of constant study choices isparticularly convincing." (Dell'Mour 1990)

Enrolment numbers can serve as an indicator of likely tendencies over the short term. In view of the differences in the average length of studies, this indicator gives us better information in the case of the universities than in the case of NUIs. Enrolment indicates a decrease of teacher's studies and health studies on the one hand, and an increase of the other categories, which seem to be strongest in the categories of technology and natural sciences. Nevertheless, enrolment must still be considered with some caution in view of the difference in success rates among the various higher education courses.

B. OUTPUT OF THE EDUCATIONAL SYSTEM, 1977-1987

In this section an attempt is made to describe the yearly output of the educational system as a whole. This description is not easy because there is a lack of data on several aspects of the problem. The framework within which the analysis is carried out distinguishes the following notions:

(a) The *gross output*, i.e. the number of persons who are actually leaving the different parts of the educational system. It includes two categories of persons, namely graduates and dropouts. Both categories can be principally described by reference to the level and vocational orientation of the courses left;

(b) This "gross output" is not identical with the *net output*, which is more directly relevant for the labour market, first of all because of direct transfers from the secondary to the post secondary level of the system, and in addition because there also exist transfers between different institutions at the secondary or post-secondary level. This "net output" can therefore be defined as gross output minus transfers.

In an analysis of the interaction between the educational system and the labour market, two different views can be taken. The traditional view focuses on the interaction of the different parts of the system with the corresponding areas of the employment system. This view is based on the assumption that there exist given patterns of correspondence between educational courses and employment areas. This approach has two main weaknesses. First, it concentrates on graduates and tends to forget about the dropouts; second, it tends to interpret a change in patterns of correspondence as an anomaly creating problems, rather than as an adaptation process which is needed to cope with the changing demands both from the labour market and from young people. Another approach is to consider the gross output as a (potential) supply to the labour market, with complex selection processes. This second view is thought to be more realistic, and an attempt is made below to describe the output of the educational system accordingly.

1. "Gross Output" of the Educational System, 1977-1987

Describing the output of graduates does not involve many data problems. One such problem is that for most institutions except university courses the exact numbers of graduates are not available; only the numbers of students in graduate classes are available. Another is that there is little information about drop out rates; only rough estimates can be given about them.

Overall gross graduate numbers per year vary between 110 000 and 114 000. The composition of the gross output in 1977 and 1987 and the average is presented in Table 1 below.

Table 1
Structure of the gross output from the educational system, by level of institution, 1977-1987

	av.77-87	1977	1987
Middle-level secondary schools			
- Apprenticeship	50.5%	55.4%	47.1%
- Mid. level vocational schools	14.7%	14.9%	14.0%
Higher-level secondary schools			
- Higher level, general	14.7%	13.5%	14.8%
- Higher level, vocational	9.2%	6.3%	12.3%
Total secondary graduates	89.1%	90.1%	88.2%
Post-secondary institutions			
- Non-university institutions	4.7%	5.1%	4.2%
- Universities	6.3%	4.8%	7.5%
Total post-secondary graduates	11.0%	9.9%	11.7%

Source: IHS-Project "Ausbildungen und Berufe", Lassnigg 1989

Table 1 shows that:

1) the share of graduates from higher-level secondary schools has been increasing, from 19.8% to 27.1%, at the expense of apprenticeship;

2) within these institutions there has been a marked growth of the flows from the vocational streams, their share increasing from roughly one third to almost half of graduates at this level;

3) the share of post-secondary graduates has been increasing, from 9.9% to 11.7%, a slight increase compared with the upper secondary institutions;

4) within post-secondary institutions there has been a shift from NUIs to the universities.

The growth of higher secondary schools has important consequences for the dynamics of the system. Graduates from these schools are entitled to continue their studies at post-secondary level, whereas graduates from other secondary institutions are not. This provides additional opportunities to young people. At the same time it leads to an increasing degree of uncertainty from a labour demand point of view, because it is difficult to predict -- and even more difficult to steer -- the choices of these graduates.

Another consequence of the changed composition of output in terms of institutional level is the induced change in the composition of this output in terms of occupational categories. This is shown in Table 2.

Table 2
Structure of the gross output of the educational system, by occupational category, 1977-1987

	av.77-87	1977	1987
Agriculture, tourism, cleaning	10.1%	9.2%	11.3%
Crafts, technology, natural sciences	34.3%	38.9%	32.1%
Trade, business, administration	28.5%	26.4%	28.8%
Health, social services	6.8%	6.0%	7.6%
Education, teaching	4.3%	4.8%	3.7%
Arts, culture	16.0%	14.7%	16.5%

Source: IHS-Project "Ausbildungen und Berufe", Lassnigg 1989

Table 2 shows shrinking numbers within the "crafts" category, geared to occupations in industry; it nevertheless remains the largest section at the end of the period. The share of courses leading to teaching positions has declined. The share of the other categories -- which can be labelled as service-oriented -- has increased moderately. The category "arts, culture" deserves special attention. Graduates in this category mostly come from the general branch of upper secondary schools; they may be considered as a source of flexible and adaptive labour.

In the "craft, technology, natural science", as well as in the "business and administration" categories there is a clear upgrading tendency. Graduate numbers from post-secondary and higher secondary levels are growing, while graduate numbers from apprenticeship, technical branch, and from middle-level secondary school, business branch, are declining. The composition of the output of graduates by education levels within the other occupational categories hasremained more stable.

The second component of the gross output are the persons who leave the system without completing a course. As mentioned above, this component is not regularly documented for all parts of the educational system. Information about the outflows are partly available, but it is not known whether persons who have left particular parts of the system without obtaining a formal grade -- "gross dropouts" -- in reality are changing to other parts of the system. The apprenticeship system is loosely connected to the school system and, therefore the flows between these two parts are not registered. A second important remark about dropouts is that university dropouts may have completed a secondary vocational school and, therefore, already have a recognized qualification.

Clement, Ahammer & Kaluza (1980) published estimates of the numbers of gross dropouts between 1978 and 1990. These estimates were calculated on the basis of a model, which was intended to forecast future developments. We can accept these numbers as rough indicators giving the order of magnitude of the dropout component of gross output. Dropouts are defined as all persons who left a course without obtaining the final qualification (ibid. p.43f). The model provides a total number of about 35 000 persons a year.

Trends in the composition of the total number of dropouts by level of education -- compulsory, secondary, post-secondary -- were estimated taking into account the demographic factor. Dropouts from secondary institutions represented approximately one third of the overall numbers, this share remaining constant during the period. A shift has occurred between the two other levels. The estimate was a declining share of dropouts at the compulsory level (1978: 45%; 1987: 32%) and an increase in the share of dropouts at post- secondary level (1978: 18%; 1987: 33%).

Table 3
Gross drop-out numbers, 1978-1987

	compulsory level	secondary level	post-secondary level	sum
1978	15 900	13 000	6 400	35 300
1987	10 900	12 000	11 400	34 300

Source: Clement, Ahammer & Kaluza 1980, p.158

Another estimate of the numbers dropping out from the universities was produced by Dell'Mour (1990). This analysis leads to a total number of 9 700 in 1987. This total is broken down by category of courses.

Table 4
Estimated numbers of drop-outs and numbers of graduates (3) from universities, by category of course (1987)

	Dropouts	Graduates	
		1rst Deg.	2nd Deg.
Agriculture, Forestry	300	200	100
Mining	100	100	-
Technology	700	800	100
Natural Sciences	1 300	1 100	400
Law	1 300	900	600
Business Administration	1 200	800	200
Social Sciences	900	500	100
Behav. & Educ. Sciences	1 000	400	100
Language studies	1 300	900	800
History studies	600	600	100
Medicine	900	1 400	-
Pharmacy	100	100	-
Veterinary	100	100	-

Source: Dell'Mour 1990, Appendix, tab. 213-217.

Dropout numbers are very high and often exceed the numbers of graduates from the universities. To a high degree this is due to the open study system, which does not require formal attendance as a condition for studying. As a result individual study careers are controlled by administration very loosely.

2. Net Output of the Educational System, 1977-1987

In principle, the gross output may be seen as composed of persons available for employment. This means that the persons who leave the educational system could be recruited into jobs if appropriate conditions existed. In reality a large part of this gross output is not recruited into jobs. Three categories may be distinguished within this group: (a) persons who continue their education, (b) persons who are unemployed, (c) persons who are out of the labour force for other reasons. Boundaries between these categories are often blurred and open to interpretation.

Among persons who continue their education at post-secondary level, a large number would prefer taking a job if appropriate jobs were available to them (Kellermann, 1988). In fact, the number of persons who continue their education at university level has increased continuously during the last decades. The overall proportion of upper secondary school graduates who enrolled at university has increased from about 60% at the end of the sixties to about 70% in the mid-eighties. There are marked differences between the vocational stream of higher secondary schools and the general stream. From the latter the proportion of graduates who enroll at universities increased from 75% to 85%. The transfer rates from the vocational streams was 30-35% during the mid-seventies, and increased to 45-50% during the mid-eighties. A leveling off seems to have occurred in 1985.

The gross output from higher secondary schools is reduced by these enrolments at universities, as shown in Table 5.

Table 5
Effect of transfers to higher education
on the ouput from upper secondary schools (1977-1987)

	1977			1987		
	gross output	transf. univ	net output	gross output	trans univ	net output
· general	15 200	11 400	3 800	16 400	13 900	2 500
· technical	3 400	1 100	2 300	5 400	2 800	2 600
· business	3 700	1 300	2 400	7 900	3 700	4 200
· agriculture	-	-	-	300	200	100
total	22 300	13 800	8 500	30 000	20 600	9 400

Source: IHS-Project "Ausbildungen und Berufe", Lassnigg 1989

Output of higher secondary schools is reduced to a considerable extent by transfers to university. Dropouts from university can be taken into account: many students drop out from universities during or at the end of the first year; these could be counted as qualified leavers from upper secondary education, thus increasing the size of output from this level. Their number still does not compensate the increased transfers to university. Net output has been increasing to a much lesser degree (+ 10.6%) than gross output (+ 34.5%) and transfers to universities (+ 49.3%).

Table 6 shows the effect on the occupational structure of the overall output of these transfers from higher secondary schools to university. The figures in this Table indicate a sharp reduction in the share of the "arts, culture, general education" category in the net output. The number of graduates from these courses who do not continue their studies has declined between 1977 and 1987.

Table 6
Effect of the transfers to higher education on the occupational structure of the overall output (1977-1987)

	1977		1987	
	gross	net	gross	net
Agriculture, tourism	9.2%	10.5%	11.3%	13.9%
Crafts, technology, nat. sciences	38.9%	43.2%	32.1%	36.3%
Trade, business adm., law	26.4%	28.8%	28.8%	31.3%
Health, social services	6.0%	6.9%	7.6%	9.3%
Education, teaching	4.8%	5.4%	3.7%	4.5%
Arts, culture, general education	14.7%	5.2%	16.5%	4.8%
Total (abs. numbers)	112 800	99 100	110 600	90 200

Source: IHS-Project "Ausbildungen und Berufe", Lassnigg 1989

Unfortunately, it is not possible to go further, taking into account the occupational structure of dropouts, because of the lack of data. But some overall estimates about inflows into the apprenticeship system can help. The educational experience of those who start an apprenticeship is published yearly. Only about 45% of these new entrants are coming from the 9th grade of compulsory school (*Polytechnischer Lehrgang*), which was designed as the proper feeding mechanism to apprenticeship. In 1977 between 14% and 21% of new entrants into apprenticeship could be considered as dropouts from upper secondary schools. In 1987 the flow had increased and the estimate was between 22% and 30%. The size of this flow (in 1977, between 9 000 and 13 000; in 1987: between 11 000 and 14 000) was comparable to the estimated dropout numbers from these institutions (13 000 in 1977 and 12 000 in 1987). The third category of new entrants to apprenticeship are those who may be counted as dropouts from lower secondary (compulsory) schools. They represented about 36% of the new entrants in 1977, and 25% in 1987. The absolute figures are equal to the estimated dropout numbers in 1987 (about 11 000), but were considerably

higher than those for 1977 (22 000 new entrants from compulsory schools vs. 16 000 estimated dropouts). This difference may be explained by the number of those who left compulsory schools, having repeated one year during classes 1 - 8; these are not classified as dropouts, but as compulsory school leavers who did not complete the 9th grade.

A last category of persons contributing to the reduction of the gross output (at university level) are those who continue to study after obtaining their first grade. Because it is very common to continue formal registration at university after completion of the first grade, the registered enrolment numbers do not give any useful information about this. There is a very high number of students registered at university for different reasons and, as a result, enrolment numbers overestimate the number of "real students". Nevertheless, we can draw some information on this from a survey on the proportion of graduates who continue to study. Loudon (1989) reports survey data concerning 1985-86 graduates and compares her results with those from an older study on 1975-76 graduates (Lassnigg & Schramm 1985). According to these data, an increasing share of graduates is continuing studies after completing their first degree (in 1975-76, 32%; in 1985-86, 42%). The figures were 1 700 among 1975-76 graduates, 3 500 among those of 1985-86. These figures neither indicate whether they study full-time nor do they indicate whether they are out of the labour force.

3. Breakdown by Gender

The output of the educational system varies greatly depending on gender. This difference has to be taken into account in terms of "net output" as well as of the actual flows of young people entering the labour market. Such a statement may be a platitude today, but the actual consequences of the changing gender composition of the flows of young people entering employment are not always well-perceived. A first such consequence stems from a well-known relation between level of educational attainment and labour force participation. Gudrun Biffl analysed the changing labour force participation in Austria. She noted:

> "While the prolongation of education has a moderating effect on employment growth, it is also one of the strongest factors contributing to an increased labour force participation across the entire life cycle. Women with higher levels of educational attainment have higher labour force participation rates."(Biffl 1988)

Female labour force participation is rising, but is still lower than male labour force participation. Table 7 shows labour force participation by educational level, age, and gender in 1981.

Table 7
Labour force participation rates
by level of educational attainment, age-group and gender (1981)
(as a percentage of total population in the same category)

Age group (years)		15-19	20-24	25-29
Compulsory school	m	55.6	86.4	93.5
	f	47.2	69.5	58.3
Apprenticeship	m	99.0	98.9	99.0
	f	96.8	84.3	63.8
Middle-level secondary school	m	87.7	96.8	98.5
	f	86.9	89.4	75.7
Higher-level secondary school	m	33.9	45.0	67.9
	f	19.9	44.5	63.0
Non-university institutions	m	-	(90.9)	(96.8)
	f	-	95.1	94.2
University	m	-	(57.6)	89.4
	f	-	(64.9)	83.8

Source: Austrian Central Statistical Office, census data (brackets indicate very low absolute numbers)

For those levels of educational attainment below upper secondary school, labour force participation rates of young women are considerably lower than those of young men. For higher education graduates, however, the difference is very small. For people in the middle-aged group (aged between 30 and 40), the difference in labour force participation rates between men and women with higher education is more significant, nearly 100 per cent for men v. around 80 per cent for women. It should be noted, however, that the participation rates of female higher education graduates aged between 30 and 40 is increasing; over the last decade it increased from around 70 to 80%.

The proportion of women among university graduates has been increasing from about 30 to 40% over the last decade. The number of male graduates was 32% higher in 1987 than in 1977, whereas the number of female graduates has increased by 97%. There are significant differences in the proportion of women among graduates depending on the occupational categories.

Table 8
Proportion of women among university graduates, by occupational category (1977-1987)

	av.77-87	1977	1987	a.n.87	77=100
Agriculture, tourism	16%	12%	19%	38	380
Crafts, technology	11%	10%	12%	161	166
Trade, bus. adm.	29%	18%	31%	675	331
Health, soc. services	40%	32%	44%	884	233
Education, teaching	59%	50%	66%	1046	131
Arts, culture	50%	46%	55%	566	256
Total	37%	31%	41%	3 370	197

Source: IHS-Project "Ausbildungen und Berufe", Lassnigg 1989

Depending on the occupational category, the proportion of women graduates ranges from about 10% (technology) to more than 60% (education). There are also wide difference in the growth rates of female graduate numbers.

Two issues must be considered in this respect. If there is a segmented labour market and if employment opportunities for university graduates are scarce, then the additional female graduates may not be able to find suitable jobs. One may also expect a higher flexibility of female graduates. The employment of female university graduates can be seen, therefore, as one of the crucial policy problems in the coming years.

In the universities the proportion of female students increased slightly over the decade, from 38 to 42%. It increased in all occupational categories. The proportion of women was some percentage points higher among students than among the graduates. This suggests that dropping out is a somewhat more common tendency among female students. Male student numbers have roughly doubled over the period within four of the six categories (agriculture, technology, business administration, and arts and culture). They increased slightly in health studies and decreased slightly in education.

II. THE CHANGING EMPLOYMENT PROSPECTS

In this section on employment prospects we will draw on the results of a survey of 1985-86 graduates carried out in the spring of 1988. In some cases we will compare these with those of a similar survey concerning the students graduating in 1975-76 and 1978-79 (Loudon 1988) (4).

1. The Distribution of Graduates in the Economy

The classifications we shall refer to here are those which were used in the survey of the 1975-76 graduates by the Institut für Bildungsforschung der Wirtschaft. Higher education courses were grouped into twenty categories; there were sixteen branches of economic activity (see Annex, Table 4).

Most graduates in the humanities are employed in cultural affairs, public administration, in schools and universities. Most graduates in law are to be found in public administration, followed by economic services, banks and insurance. Graduates in business and economics are distributed among all branches of economic activity; a large proportion, however, are found in economic services, banks and insurance companies, commerce and public administration. Most graduates in the social and behavioural sciences are absorbed by public services, by health and welfare services and by the universities.

As regards studies that provide occupation-related "know-how" -- at least those still in demand (building and civil engineering, architecture, mechanical and electrical engineering), the distribution of graduates shows a strong concentration in particular branches of economy.

2. Employment in Traditional and New Fields of Employment

To investigate whether the jobs in which the graduates started their careers were in traditional or newly developed fields of employemnt, three questions were put to them. The first question was whether the job was newly developed or already existed. With those graduates who had a predecessor, we tried to determine whether they had to fulfill the same tasks as their predecessors or whether the tasks had changed. Finally, we wished to have information about the qualification of the predecessor. Here, the percentage of graduates who had a predecessor with different (lower) qualification was of interest, as an indicator of an upgrading process.

In brief, by non-traditional fields of employment we mean, first, jobs already existing, but which were changed either with respect to the tasks involved or the qualification required when the replacement took place; second, newly developed jobs.

The results of the survey show the distribution of graduates in various kinds of jobs: 29% of the graduates found employment in newly developed jobs. Among the remaining 71 per cent who had a predecessor, 42% had the same tasks as their predecessors; about 10% had the same tasks as their predecessors at

the beginning but these were changed later; 9% of the graduates had different tasks.

As regards the qualification of the predecessors, 56% of the graduates had a predecessor with a university degree; in many cases this predecessor had completed the same course of study (48%). The remaining 15% were employed in so called "academicised" jobs, which means that their predecessor had no academic degree.

To be able to say more about the nature of non-traditional fields of employment, one must find out which categories of graduates are represented in these non-traditional fields of employment and whether there are significant relationships between course of study and field of employment (traditional or non-traditional).

As regards the newly developed jobs, there are considerable differences between courses of study. The largest part of those who had a newly developed job were to be found among the graduates in business and economics (29.8%). There was also a high percentage (11.8%) of graduates from "other technical courses". A small percentage of the graduates who had a newly developed job were to be found among chemists (0.9%), veterinary surgeons (0.3%) and interpreters (0.6%).

With respect to the question of whether tasks had changed or not, we determined that the largest percentage of those whose jobs contained different tasks from those of the predecessor were graduates in business and economics (27.9%), followed by graduates from "other technical courses" (7.3%). The lowest percentage were graduates in electrical engineering, architecture and theology (each 0.6%). If we now consider the graduates whose jobs had not changed, we find the largest percentage of graduates in law (15.7%) and medicine (29.6%); the lowest percentage are graduates of mechanical (0.1%) and electrical engineering (0.4%).

As regards the qualification of the predecessor there were also significant differences between courses of study. Nearly one half of the graduates in the humanities (41.4%), 32% of the graduates in business and economics, 41% of the graduates in the behavioural sciences had found a job which had not previously been filled by a universitiy graduate.

The results concerning the "academicised" jobs clearly show that the graduate labour market mainly expanded by the replacement of persons with no academic qualification by university graduates from the humanities, business and economics and the social and behavioural sciences.

To what extent graduates strive for these non-traditional academic employment fields and to what extent they have to accept them because they have no other possibilities, is a question still to be answered.

The survey provides some insights, however. The responses to the three questions on traditional and non-traditional fields of employment by field of study revealed that one third of the graduates in business and economics had newly developed jobs. Around 30% of the graduates business and economics had jobs where the tasks had changed compared with those of their predecessors and that about one third of these graduates (the percentage of graduates in the

humanities was even higher) had found jobs which were not previously filled by university graduates.

If we then consider the case of these graduates in business and economics who -- according to their responses to the three questions in the survey -- most clearly form a group who, to a large extent, work in non-traditional fields of employment, and if we wish to answer the above question (whether they were there voluntarily or because they had not found another job), information about other variables could help.

The average income of this group of graduates was 12 000 Austrian Shillings after graduation and therefore about average among graduate incomes. At the time of the survey their income was 15 700 Shillings, a thirty percent increase, but still around the average. This implies that on the basis of this parameter we cannot draw a conclusion about the willingness of this group to work in non-traditional fields of employment (it might be different for otherwise for graduates from other courses of study).

However, with the help of the variable, "involuntary waiting for a job", we are in a better position to deal with the initial question of whether graduates strive for work in non-traditional fields of employment or have to accept them for lack of other alternatives. First, "involuntary waiting" was found more frequently in jobs where the young graduates had the same tasks as their predecessors; and it was also more frequent with those graduates who had replaced a university graduate. This suggest that graduates still aim at jobs in traditional fields of employment, and only when the chances of finding such a job are limited for those who completed a specific course of study, are they taking jobs in a "non-traditional" field of employment.

3. The Conditions of the Transition to Employment

The waiting period for the first job can be used as an indicator of the demand for graduates from the various fields of study. Whereas the survey of 1975-76 graduates show that 50% of them did not have to wait for a first job, the survey of 1985-86 graduates indicated that only 21% of them found work immediately. Furthermore, 4% of the 1975-76 graduates, but 11% of those of 1985-86 had to wait for more than twelve months. This indicates a deterioration of the employment situation (see Annex Table 5).

The nature of the work contract is another indicator of the conditions of the transition to employment. Among those graduates who did find a job, the further prospects may differ. Some may obtain a career job, others only have access to short-term employment. In part, short-term employment among graduates can be axplained by the compulsory fixed-term appointments before entry to certain professions, such as the probationary year for teachers or the praxis year for law graduates. In addition to these specific categories, another 20% were forced to take on short-term employment (see Annex Table 6).

A record was also kept of the unemployment experience of graduates between graduation and the time of the survey. The percentages must be viewed with some caution, since the number of graduates from particular courses is too small to draw a valid conclusion. Among the fields where the number of graduates is large enough to draw such conclusions the highest percentage of

graduates who had been unemployed for a certain period are found among teachers (38.5%), graduates in the humanities (40.9%), graduates from schools of medicine (58%) and graduates in the social and behavioural sciences (60.5%).

It must be added that between graduation and the time of the survey only 26.7% of all male graduates, but 44.4% of female graduates had been temporarily unemployed. As regards unemployment benefits, there were also significant differences between male and female graduates: 16% of the men and 27% of the women had received unemployment benefits.

"Graduate training" can be considered as a labour market policy measure: 14.2% of the graduates took advantage of this measure -- 19% of the female and 11% of the male graduates.

4. Income Development

In the survey the net income of graduates was recorded twice: at the start of their professional life and at the time of the survey. At the beginning of their professional life, graduates had an average net income of 11 200 Schillings, at the time of the survey, 13 900 Schillings, a 24 per cent increase.

There were significant income differences between the sexes. After graduation men had an average net income of 12 600 Shillings, women 10 800 Shillings (85% of the men's income). At the time of the survey men had an average net income of 15 400 Shillings, women 13 300 Shillings (86% of the men's income).

As income and income development differ greatly depending on the course of study completed, we analysed the incomes of graduates from different fields of study (see Annex, Tables 7, 7a and 7b). Engineering graduates (coal and steel, mechanical engineering, building and construction) had the highest incomes after graduation. They were followed by graduates in medicine and veterinary medicine.

The dispersion of the average net income at the time of the survey was similar to that after graduation. Graduates in the technical fields had the highest net incomes. The largest increases at the time of the survey was found in pharmacy, the teaching profession, law, business and economic sciences. In the teaching professions and law this increase of income can be attributed mainly to the fact that during this first year period, incomes are very low.

5. Early Career Mobility

The first question which was considered was to what extent graduates' jobs were related to their completed course of study. Not surprisingly high percentages were found for teachers (75%), graduates in the natural sciences (52%), theologians (73.2%), law graduates (78.5%), doctors (79%), veterinary surgeons (90.9%), pharmacy graduates (94%), whereas the lowest percentages were to be found among graduates in the humanities (39%), business and economics (23.1%), the social and behavioural sciences (35.5%), interpreters (9.5%), coal and steel engineers (29.9%) and graduates from the agricultural university (35.2%).

A university degree was not necessary for the jobs of 33.9% of graduates in the humanities, 25.3% of business and economics graduates, for 41.9% of the graduates in the social and behavioural sciences and for 66.7% of the interpreters.

Another question to be considered was to find out the proportion of graduates who were still in their first job two years after graduation. 68.1% of them still had the same job, 32% had changed. The highest mobility rates were found among teachers (31.3%), graduates in the natural sciences (33.3%), law graduates (50.5%), doctors (37.2%), veterinary surgeons (36.5%), pharmacy graduates (62%), interpreters (42.1%), civil engineers (31.4%) and architects (44.2%). Mathematicians, physicists and theologians show the lowest mobility rates. Taking into account the fact that a job change at the end of the first year is compulsory in some professions, we assumed that the mobility of those who had to change jobs for other reasons was an indicator of instability. We considered this to be the case of natural science graduates, interpreters, civil engineers and architects.

We also wished to know in which economic sectors mobility was most frequent. We used a classification including 92 occupational categories. The distribution of graduates was recorded after graduation and at the time of the survey. The results are shown in Table 9.

Table 9
Distribution of employed graduates
after graduation and at the time of the survey (real numbers)

	after graduation	at the time of the survey
Agriculture	17	12
Wholesale, retail trade	71	73
Advertising, commercial services	41	43
Paramedical professions	35	26
Bank, insurance	79	78
Architecture, civil engineering	84	82
Mechanical, electrical engineering	19	21
Technicians	172	160
Employees in administration	53	80
Jurists, business consultants	303	232
Business owners, managers	83	99
Office jobs	41	36
Health services	274	273
Social workers, therapists	38	41
Teachers	398	352
Science-related jobs	308	286
Authors, journalists, interpreters	29	25
Veterinary surgeons	16	16

The number of employees in administration had risen considerably, as well as the number of business owners and managers. The number of jurists and business consultants was reduced between the first job and the time of the survey. This may be explained in part by the fact that law graduates have to change jobs after one year. The reduction in the number of teachers could also be explained by the fact that, after the probationary year, some of them change jobs. The reduction in the numbers in science-related jobs is tied to the fact that many graduates worked as free lance scientists after graduating, but had a permanent job at the time of the survey.

Another measure of early career mobility is the percentage of graduates who had remained in the same job since graduation. Table 10 lists occupations in which graduate were most stable (where the percentages in the same occupation was above 60%).

Table 10
Occupations where young graduates were most stable
(more than 60 per cent in the same occupation at the time of the survey)

Men	100.0%	office jobs
	98.6%	architects, civil engineers
	95.5%	health professions
	94.9%	teachers
	90.1%	other engineers
	91.1%	jurists, business consultants
	83.3%	wholesale, retail trades
	78.6%	commercial services, advertising
	71.0%	business owners, managers
	63.8%	administration employees
Women	100.0%	health professions
	96.8%	teachers
	88.9%	authors, journalists, interpreters
	86.8%	science-related jobs
	85.0%	other engineers
	84.6%	business owners, managers
	80.0%	social workers, therapists
	72.2%	wholesale, retaile trades
	66.7%	architects

There are some revealing differences between men and women. For example the percentage was much higher for male than female architects (98.6 v. 66.7 per cent), as well as in wholesale and retailtrades (83.3 v. 72.2 per cent). In contrast, we found that among the business owners and managers, the percentage was higher for women (men, 71.0, women 84.6 per cent). In science-related occupations women had a lower stability rate; this suggests that many of them still worked free-lance and had not yet found a stable job. Finally, one can note that the occupations in which men and women show the highest stability were different.

NOTES

(1) **Classification of study courses: occupational groupings**

The definition of the occupational categories into which study courses were grouped stems from a project on the vocational training system in Austria. These definitions differ in some respects from those of the "orthodox" employment statistics. This may be seen as a disadvantage in terms of comparability; however, the definitions provide a more sophisticated picture of the output of graduates.

Several groupings of courses of study were used:

i) six broad occupational categories

The "six broad occupational categories" were defined not only for the purpose of a classification of university courses, but as an overall classification which could be applied to all levels of the vocational training system. It was used in several tables of this report, e.g. Tables 2, 6 and 8.

1) Agriculture, tourism
2) Crafts, technology, natural sciences
3) Trade, business, administration
4) Health, social services
5) Education, teaching
6) Arts, culture, communication

ii) three sectors

The six categories can be combined into three sectors:

a) studies oriented to the economy and the state:
Here the categories (1), (2) and (3) from above are combined into the occupational field of industry, commerce and administration;

b) studies oriented to the cultural system:
Here the categories (5) and (6) are combined into the occupational field of teaching and culture;

c) studies oriented to the health services:
Here category (3) is included.

iii) two more detailed classifications, corresponding to different data sources, were also used, one more "functional", the other more "institutional", respectively, in Tables 1, 3 and in Table 4 (see notes to Table 4) in the Annex.

The following shows how these groupings relate:
[category numbers refer to those used in Table 4 of the Annex]

(a) *Courses of study related to occupations in industry, commerce and administration*:

1) Agriculture, tourism: Within this group there is one category of university courses:

- agricultural studies (category 20)

2) Crafts, technology, natural sciences: Within this group there are four categories of university courses:

- Technology (categories: 14 - building and construction engineering, 15 - architecture, 16 - mechanical engineering, 17 - electrical engineering, 18 - other technical courses of study);
- Natural sciences "A" - "hard sciences" (categories: 3 - mathematics, physics, 4 - chemistry, partly category 5 - other sciences, e.g. logistics);
- Natural sciences "B" - "soft sciences" (most study courses of category 5, especially the biological sciences);
- Mining studies (category 19).

3) Trade, business, administration: Within this group there are two categories of university courses:

- Economic and business studies (category 8);
- Law (category 7).

b) *Courses of study related to the occupational fields of teaching and culture*

5) "Education, teaching": Within this group there are six categories of university courses, all of them included in category 1:

- Teaching natural sciences "A" (see definition above);
- Teaching natural sciencces "B" (see definition above);
- Teaching languages;
- Teaching history;
- Teaching arts;
- Teaching religion.

6) Arts, culture, communication": Within this group there are six categories of university courses:

- Social and behavioural sciences (category 12, and partly category 8);
- Language studies (category 13, partly category 2);
- History studies (partly category 2);
- Arts studies (partly category 2);
- Theology (category 6);
- Sports studies.

c) *Courses of study related to the occupational field of health service*

4) Health, social services: Within this group there are three categories of university courses:

- Medicine (category 9);
- Pharmacy (category 11);
- Veterinary studies (category 10).

2) Kolleg

This type of institution is located within Higher Secondary Vocational Schools (HSVS) but ,at least "functionally", one can speak of an independent institution. It is part of the non-university sector, and the study lasts two years. Completion of Higher Secondary General School is required for admission. The curriculum consists of the vocational subjects of the HSVS. Formally the credentials from this type of institution are equal to those from HSVS.

3) There are two university grades, the first is called *"Diplom"*, the second is called "Doktorat". In certain fields of study these two qualifications traditionally co-existed (e.g. technology or business administration), whereas in other fields (e.g. the humanities, medicine) the *"Doktorat"* was in fact the first degree. In addition teacher training studies led to a cthird type of degree, called *"Lehramt"*, which was not given by the universities but by a special commission. With the reforms of the sixties and seventies the two-degree structure was extended to more or less the whole system. Over the last decades the traditional degrees and the reformed degrees were provided in parallel. The distinction between them is not frequent in the statistics. Normally, the term "university graduates" is differentiated, whether the graduation has been the "first" during the career of the student (*"Erstabschlüsse"*, which covers a mixture of *"Diplom"* and *"Doktorat"*) or the "second" during the career of the student (*"Zweitabschlüsse"*, which includes the *"Doktorat"* as second degree only to the extent it is passed really as a second degree).

4) The 1985-86 survey

Of 9 098 students who completed their studies in 1985-86, 8 430 got their first academic degree (Magister, Magistra). The twelve Austrian universities were able to provide 7 068 addresses (graduates with higher degrees were not covered by our survey); 2 519 questionnaires were returned, a response rate of 36.5% (36.8% for women, 35.5% for men).

Most of the questions were the same as in a similar study carried out by by the Austrian Institut für Berufsforschung in 1975-76 in order to allow for comparisons.

In the following section we refer to the results of the 1975-76 surveys wherever appropriate.

ANNEX

Table 1
Graduate Numbers by Field of Study: Universities

Courses of study	1977	1979	1981	1983	1985	1987
Technology	756	786	788	819	929	975
Mining studies	57	48	56	63	58	74
Natural sc. A ("hard")	115	89	116	64	80	103
Natural sc. B ("soft")	80	95	100	121	122	143
Law	454	678	979	1072	896	937
Economic and business sc.	655	724	780	911	1070	1247
Medicine	808	1004	1228	1419	1388	1419
Pharmacy	82	137	183	115	124	150
Veterinary surgeon	59	53	73	76	77	83
Teaching nat.sc. A	323	284	209	218	148	140
Teaching nat.sc. B	295	277	335	353	337	333
Teaching languages	584	589	686	647	558	593
Teaching history	236	185	230	259	273	288
Teaching religion	20	22	66	44	74	98
Language studies	107	143	128	167	194	218
History studies	89	113	114	137	188	226
Social and behav. sc.	191	229	217	300	359	442
Sports studies	5	6	4	4	39	44
Theology	90	106	107	132	110	98
Agricultural stud.	85	116	137	174	213	204
Teaching Arts	134	192	170	119	141	135
Arts studies	224	245	220	267	268	355

Source: IHS-project "Ausbildungen und Berufe", Lassnigg 1989

Table 2
Graduate Numbers by Field of Study: NUIs

Courses of study	1977	1979	1981	1983	1985	1987
Technology	320	217	261	244	493	522
Techn.short cycle	30	51	30	21	49	66
Business	751	842	874	104	396	367
Medicine personnel	516	531	558	611	594	574
Social workers	211	258	264	281	250	256
Teachers compulsory schools	3266	2795	2583	2583	2342	1823
Teachers vocational schools	382	384	425	449	389	353
Teachers agricultural schools	85	99	114	130	164	115
Teachers religion	-	-	133	149	168	124
Tourism	124	211	279	385	380	351

Source: IHS-project "Ausbildungen und Berufe", Lassnigg 1989

Table 3
Percentages of Female Graduates
by Field of Study

courses of study	1977	1987	average 1977-1987
Technology	7.7	8.7	7.6
Mining studies	1.8	6.8	3.1
Natural science A ("hard")	8.7	9.7	10.8
Natural science B ("soft")	35.0	37.8	36.0
Law	18.9	29.9	29.3
Economic and business science	18.0	31.7	27.9
Medicine	28.5	42.1	37.2
Pharmacy	63.4	75.3	71.2
Veterinary surgeon	15.3	37.3	31.8
Teaching nat.sc.A	40.2	43.6	43.4
Teaching nat.sc.B	36.6	62.5	51.5
Teaching languages	64.4	75.7	70.5
Teaching history	47.0	65.3	61.1
Teaching religion	30.0	61.2	46.3
Language studies	72.9	75.7	72.3
History studies	50.6	56.2	54.8
Social and behavioural science	46.6	53.8	50.1
Sports studies	20.0	65.9	70.6
Theology	8.9	21.4	14.2
Agricultural studies	11.8	18.6	16.0
Teaching Arts	50.7	59.3	53.6
Arts studies	39.3	40.0	40.5

Source: IHS-project "Ausbildungen und Berufe", Lassnigg 1989

Table 4
Distribution of University Graduates
by Branch of Economic Activity
(real numbers)

courses of study	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	sum
Teaching profession	13	227	2	1	13	1	4	2	4	1	2	-	3	11	-	1	285
Humanities	16	28	5	2	4	2	-	4	2	-	-	-	33	18	-	-	114
Mathematics / physics	19	7	1	2	-	3	2	1	-	5	8	-	-	4	1	-	53
Chemistry	11	1	2	-	-	-	-	-	5	1	-	-	-	3	-	-	23
Other (natural) sciences	16	6	9	-	2	-	-	-	3	-	1	-	3	4	1	3	48
Theology	-	16	-	-	-	-	-	-	1	-	-	-	21	2	-	-	40
Law	16	6	1	2	63	1	37	6	3	-	-	1	1	104	8	3	252
Business a. economic sc.	22	17	5	5	80	7	71	47	53	24	13	4	10	34	10	2	404
Medicine	28	-	1	253	1	1	1	2	6	2	-	-	2	7	2	-	306
Veterinary surgeon	7	-	-	8	-	-	-	-	-	-	-	-	-	3	-	-	18
Pharmacy	3	-	1	35	-	-	-	2	1	-	-	-	-	1	-	-	43
Social a. behav. sc.	10	9	1	10	5	-	-	1	1	-	-	1	1	21	1	-	61
Interpret	1	2	-	-	-	-	1	4	2	1	2	-	3	4	-	-	20
Building and constr. engin.	8	-	1	-	-	5	-	-	4	4	-	22	-	3	3	-	50
Architecture	2	-	-	-	-	3	-	-	2	-	-	30	2	3	-	-	42
Mechanical engin.	6	-	-	-	-	1	-	1	4	7	1	-	-	1	-	-	21
Electrical engin.	12	-	3	-	1	2	-	-	-	2	17	1	-	4	4	-	46
Other tech. courses of st.	30	1	10	1	10	17	5	7	5	12	13	-	1	11	7	-	130
Coal and steel engin.	1	-	-	-	-	1	-	-	3	4	1	2	-	2	1	2	17
Agriculture and forestry	6	1	9	-	-	5	-	4	3	1	-	3	-	26	2	13	73
sum	227	321	51	319	179	49	121	81	102	64	58	64	80	226	40	24	2046

Source: Project "Zum Berufseinstieg von Akademikern/innen", Loudon 1988

Notes to Table 4

1) classification of the fields of study

1 = teaching profession
2 = humanities: philosophy, political science, journalism, ethnology, folklore, history, history of art, musicology, history of theatre, linguistics, German philology, classical philology, Latin, Greek, English (language and literature), Roman languages and literature, Italian, Romanian, Spanish, Portuguese, Slavonic studies, Russian, Serbo-Croat, Slovenian, Czech, Bulgarian, Polish, Japanese studies, Judaism, Finno-Ugric studies, Byzantine studies, old Semitic philology, ancient numismatics, African studies, Egyptology, Arabic studies, Turkish studies, Indish studies, Sinology, Tibetan studies and Bhuddism, translator .
3 = mathematics, physics
4 = chemistry
5 = other (natural) sciences: logistics, astronomy, meteorology and geophysics, earth sciences, mineralogy, petrology, geochemistry, technical mineralogy, geology, technical geology, coal and iron geology, palaentology, biology, botany, zoology, microbiology, genetics, human biology, pharmacognosy, geography, environmental research and environmental planning, cartography and dietetics
6 = theology
7 = law
8 = business and economic sciences: sociology, socialeconomy, social and economic statistics, statistics, economy, political economy, world commerce sciences, commerce sciences, economy informatics, business informatics, administration informatics
9 = medicine
10 = veterinary surgeon
11 = pharmacy
12 = social and behavioural sciences: psychology, educational science, sociology
13 = interpret
14 = building and construction engineering = constructing engineering, traffic engineering, water conservation
15 = architecture
16 = mechanical engineering
17 = electrical engineering
18 = other technical courses of study: economy engineering, spaceplaning, regional science, shipping, traffic technology, heat technology, microprocessor technology, communications, electrical medicine, paper technology, informatics, actuary, computing technology
19 = coal and steel engineering
20 = agriculture and forestry

2) Classification of economic branches

1: colleges, universities, academies
2: schools and other educational institutions
3: science and research institutions
4: health and welfare service
5: economic services (estate agents, legal advisers and business consultants, advertising)
6: technical services
7: banks, insurance companies
8: commerce (trade), storing (storage)
9: other industry
10: metal-processing industry
11: electrical industry
12: building and construction industry
13: culture
14: public service
15: traffic/energy
16: agriculture and forestry

Table 5
Waiting Periods of Graduates
(1975-76, 1978-79, 1985-86)

Waiting period altogether

year	no	1 - 3 months	4 - 6 months	7 - 12 months	12+ months	(N)
75/76	50%	32%	9%	5%	4%	1911 (100%)
78/79	60%	27%	7%	5%	1%	1038 (100%)
85/86	21%	15%	10%	13%	11%	2519 (100%)

Voluntary waiting period

year	no	1 -6 months	7+ months	graduates with waiting period
75/76	57%	35%	8%	956 (100%)
78/79	53%	43%	4%	415 (100%)
85/86	56%	34%	10%	1429 (100%)

Involuntary waiting period

year	no	1 -6 months	7+ months	graduates with waiting period
75/76	69%	26%	5%	956(100%)
78/79	65%	31%	4%	415 (100%)
85/86	63%	23%	14%	1429 (100%)

Source: Project "Zum Berufseinstieg von Akademikern/innen", Loudon 1988

Table 6
Limited Duration Labour Contracts

Limited employment contract at the first job

year	unlimited	limited	(N)
1975/76	57%	42%	1292
1978/79	51%	50%	888
1985/86	32%	63%	2311

Limited contract at the time of the survey

year	unlimited	limited	(N)
1975/76	80%	21%	1567
1978/79	74%	26%	831
1985/86	58%	42%	2112

Source: Project "Zum Berufseinstieg von Akademikern/innen", Loudon 1988

Table 7
Income after Graduation and at the Time of the Survey

Study	net income after graduating	net income at the time of the survey	increase of income in %
1. Teaching profession	9.200	12.200	33
2. Arts	10.000	12.200	22
3. Mathematics/physics	11.000	12.500	14
4. Chemistry	9.300	10.300	11
5. Other (natural) sciences	9.200	11.000	20
6. Theology	9.500	11.000	16
7. Jurisprudence	9.700	12.500	29
8. Business and economic sciences	12.000	15.700	30
9. Medicine	13.200	14.800	12
10. Veterinary studies	12.700	13.800	8
11. Pharmacy	9.300	13.800	48
12. Social and behaviour sciences	10.300	13.000	26
13. Interpreter	10.900	11.500	6
14. Building and Construction engineering	13.900	16.500	19
15. Architecture	12.400	14.200	15
16. Mechanical engineering	14.700	16.500	12
17. Electrical engineering	12.700	16.300	28
18. Other technical studies	13.500	16.000	19
19. Coal and steel engineering	14.800	17.900	21
20. Agriculture and forestry	12.100	14.500	20

Source: Project "Zum Berufseinstieg von Akademikern/innen", Loudon 1988

Table 7a
Income after Graduation and at the Time of the Survey (women)

Study	net income after graduating	net income at the time of the survey	increase of income in %
1. Teaching profession	9.000	11.700	30
2. Arts	9.500	11.400	20
3. Mathematics/physics	10.900	11.900	9
4. Chemistry	8.300	9.000	8
5. Other (natural) sciences	9.300	9.800	5
6. Theology	7.900	10.100	3
7. Jurisprudence	8.800	11.100	26
8. Business and economic sciences	10.900	13.700	26
9. Medicine	12.200	13.600	11
10. Veterinary studies	-	-	-
11. Pharmacy	9.000	13.700	52
12. Social and behaviour sciences	9.400	11.300	20
13. Interpreter	9.800	11.500	17
14. Building and Construction engineering	-	-	-
15. Architecture	10.100	15.200	50
16. Mechanical engineering	-	-	-
17. Electrical engineering	-	-	-
18. Other technical studies	12.600	13.800	6
19. Coal and steel engineering	-	-	-
20. Agriculture and forestry	13.100	15.400	18

Source: Project "Zum Berufseinstieg von Akademikern/innen", Loudon 1988

Table 7b
Income after Graduation and at the Time of the Survey (men)

Study	net income after graduating	net income at the time of the survey	increase of income in %
1. Teaching profession	9.600	13.500	41
2. Arts	10.900	13.600	25
3. Mathematics/physics	11.100	12.700	13
4. Chemistry	9.800	10.700	9
5. Other (natural) sciences	9.100	11.900	31
6. Theology	10.100	11.300	12
7. Jurisprudence	10.000	13.000	30
8. Business and economic sciences	12.700	16.700	31
9. Medicine	13.800	15.600	13
10. Veterinary studies	11.900	14.200	19
11. Pharmacy	10.100	13.800	37
12. Social and behaviour sciences	11.500	15.80037	
13. Interpreter	-	-	-
14. Building and Construction engineering	13.900	16.500	19
15. Architecture	12.800	14.100	10
16. Mechanical engineering	14.700	16.500	12
17. Electrical engineering	12.700	16.300	28
18. Other technical studies	13.600	16.200	19
19. Coal and steel engineering	14.800	17.900	21
20. Agriculture and forestry	11.900	14.300	20

Source: Project "Zum Berufseinstieg von Akademikern/innen", Loudon 1988

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Part II

EMPLOYMENT PROSPECTS FOR UNIVERSITY GRADUATES IN THE AUSTRIAN TRADE AND INDUSTRY

1. The Expansion of Higher Education: its Present Consequences on the Labour Market *

The recent growth in student numbers in higher education turned out to be an important challenge. Beyond its impacts on teaching, learning and research within higher education institutions themselves, it has altered the employment prospects for university graduates.

Table 1
Distribution of employed graduates
by branch of economic activity (1971-1987)

Economic Branch	1971	1981	1987
Agriculture	0.8	0.6	0.3
Production, Energy Supply, Construction	15.2	12.8	10.4
Mainly public or social services	57.3	64.6	68.7
Mainly private or business services	26.7	22.0	20.6

Source: Computations based on Census and Micro-Census data published by the Austrian Central Statistical Office

From the beginning of the 1970s, the rise in the number of secondary leavers having access to higher education institutions and, subsequently, in the number of graduates resulted in an increase in the employment of graduates, mainly in the public sector, where today about 70 percent of all graduates are to be found. Furthermore about 80 percent of the total number of additional jobs taken by higher education graduates are in the public sector, in health services, teaching and the public administration.

In 1971, 21 percent of all Austrian higher education graduates were employed in schools and universities. In 1981 the percentage already was 36 per cent and today it stands at 41 percent. Therefore, considering the general improvement within the Austrian educational system, it seems that its output rather serves the reproductivity of the system itself than the more comprehensive demands of the entire labour market.

From the beginning of the 1970s, the increased number of higher education graduates employed in the private sector resulted in rising employment shares of university level staff, especially in those economic branches which traditionally employed a significant number of people with an advanced educational level. It seems that in the "private or business services", there still is an uncovered demand and rather fair career prospects for applicants with a university degree in the relevant subjects.

* In this section the authors draw heavily on the works of A. Schneeberger.

On the opposite it can be expected that personnel demand in the public administration will be rather saturated in the near future. In view of the general fiscal constraints it may become more and more likely that this important field of employment for higher education graduates will not continue to grow.

The total number of secondary school leavers having access to higher education grew up to 32 500 in 1988. This means that about 27 percent of one age group are entitled to register at a university.

Fifty-four per cent come from general secondary schools, which mainly prepare for studies at an university. Forty-six per cent gained access to higher education at secondary vocational schools, where they were trained for jobs in certain occupational fields (for instance: metal industry, electrical engineering, tourism or business). One of the main consequences of the improvement in the educational system is that more and more students -- after completion of compulsory schooling -- prefer to attend a secondary school which qualifies them for access to higher education.

However, the projection of the current trend in upper secondary schools leads to a situation in which 37 per cent of all young people aged 18 years will be qualified for university studies in the year 2002. A result is that the recent demographic decline in birth rates will only slightly relieve the universities from the present student bulge.

The number of new entrants in Austrian universities increased from 8 100 at the beginning of the 1970s to 20 500 in the academic year 1988-89. This means that at present time every sixth young Austrian starts a university programme.

It is also important to note that the quantitative growth of the flow of leavers from upper secondary schools induced a corresponding decline in chances to have access to appropriate jobs at this level. As a consequence, more and more upper secondary school leavers transferred to higher education. For example, the transition rates from general upper secondary schools to higher education increased from 74 percent in 1975 to 87 percent in 1986 and, at the same time, the transitions from vocational secondary schools grew from 33 to 48 per cent. These figures emphasize the demand of the installation of more alternatives to the traditional universities.

During the study year 1970-71 about 5 700 students received their graduation from a university. In 1987-88 this number totaled nearly 10 000, an increase of more than 90 per cent.

Growth rates differed greatly depending on the field of study. The increase in the humanities and liberal arts amounts to 210 per cent and in medicine to 200 per cent. The growth in the number of graduations in the technical sciences (with the exception of computer sciences, a course created during this period) only grew by 17 per cent, which is by far under the average.

The distribution of higher education qualifications by subject in 1987-88 is shown in Table 2. The total number of graduates was nearly 10 000;

30 per cent of these were in the humanities and liberal arts. The growth rate figures show that graduations in law and in technical engineering were under the average, while all the other fields of study were above.

Table 2
Graduations at Austrian universities in 1987/1988: distribution and growth rates by field of study
(1970-71=100)

Field of Study	Graduates	Percent	Growth Rate
Law	1 391	13.9	- 7 %
Business Admin.	1 415	14.2	+ 90 %
Medicine	1 469	14.7	+ 169 %
Humanit. & Lib.Arts	3 006	30.1	+ 117 %
Technical Engineering	1 309	13.1	+ 42 %
Other Fields	1 391	13.9	+ 121 %
Total	9 981	100.0	+ 75 %

Supposing a constant pattern of preferred fields of subjects, the growth of student numbers in higher education institutions would induce an increasing pressure towards employment in the public administration, which would furthermore lead to a merely supply-oriented distortion of the labour market for university graduates.

It is important to note that the Austrian higher education system practically lacks alternatives to university studies, such as those that had been developed in nearly all other European countries. The existing short-cycle courses with a more vocational and practical orientation have had a limited extension, and do not so far represent a real alternative to the longer university studies.

Although the courses in the Austrian universities are broad and general, rather than specific vocational training programmes, there is a rather stable and distinct relationship between subjects and field of employment. For example, 79 per cent of the graduates from a faculty of humanities and liberal arts are employed in the teaching profession. The share among graduates from technical subjects sums up to only 12 per cent.

A consequence of this is that a further expansion of higher education institutions will necessarily increase the probability of an excess supply of those graduates who -- due to a lack of outlets for them on the labour market -- will want jobs in public administration.

This rather unbalanced qualification supply can also be brought into light by labour market statistics. Seventy-one per cent of the unemployed university graduates were teachers and doctors of medicine. Furthermore, their chances of finding appropriate jobs are at present rather poor. The number of unemployed per job offer in the different occupational fields is shown in Table 3.

Table 3
Employment of university graduates
labour market indicators
(n= 4130; end of July 1988)

Occupational Field	Number of Unemployed per job offer	Percentage among Unemployed University Graduates
Agriculture and Forestry	2.5	1
Manufacturing	3.1	1
Sales workers	3.5	1
Service workers	2.2	1
Technical workers	4.5	10
Administrative workers	12.0	16
Medical care and teaching	12.4	71
Total	3.6	101

Source: BMAS: Federal Ministry of Labour and Social Affairs; own computations

The level of graduate unemployment varies widely across occupational fields. At the same time it seems that, in spite of an increase in the total number of university graduates, there may also exist severe shortages of qualified staff in the commercial services professional fields.

2. Employment Prospects for University Graduates

A projection of future developments in the employment of higher education graduates is shown in Table 4, below. This was done on the basis of data from the general census; graduate shares in the various branches of the economy were extrapolated to the year 2000. The most important result of this projection is the tremendous growth of employment in the public services (including, in addition to public administration, teaching, public research and medical services). Starting from about 78 000 graduates in 1980, the projected number will amount to 106 000 in the year 2 000. This would imply that the share of graduates in the public services would rise from 56 to 59 percent.

As mentioned above it is not very likely that the public sector will actually have such an expansion. In fact, it is more reasonable to assume that graduate employment in the public sector will remain at its present level. So, graduates will have to look for alternative careers in the other branches of the economy -- in trade and industry.

Table 4
Projected employment of university graduates by economic branch

Economic Branch	1985	1990	1995	2000
Agriculture and Forestry	1100	1200	1200	1300
Energy and Water Supply	1100	1200	1200	1300
Food Industry	1600	1700	1700	1700
Quarrying & Building Mat.	1200	1200	1100	1200
Textile & Clothing Ind.	1900	1700	1600	1500
Wood & Paper Industry	3000	3200	3300	3300
Chemical Industry	2200	2000	1500	1300
Metal Industry	9100	9900	10200	10300
Building Industry	2900	2900	2900	2800
Retail and Wholesale Trade	12300	13800	15400	16900
Transport & Communication	2900	3100	3500	3800
Banking and Insurance	12900	14300	15300	15700
Private Services	9100	9400	10100	10800
Public Service & Administr.	78200	87400	97100	106100
Tourism	1200	1500	1700	2000
Total	140700	154300	167800	180100

Source: Data are based on a working paper prepared by G. Biffl (Austrian Institute of Economic Research) for the study group "Qualifikation 2000" of the "Beirat für Wirtschafts- und Sozialfragen" i.e. the Austrian Council for Economic and Social Affairs.

This more realistic assumption being made, we can look at these projections and see what they say about the other sectors of economic activity. The most important economic branches for graduate employment are obviously retail and wholesale trade, and banking and insurance. According to this estimate, these two branches employ about 50 per cent of the total number of university graduates in all trades and industries (public sector excluded). They are even able to further increase this percentage in spite of the general increase in the numbers of graduates. The second important branch consists of companies in the metal industry and the manufacturing of electrical equipment, where about 17 percent of all university graduates in trade and industry are employed.

Table 5
Graduate employment projections in trade and industry

Industrial Branch	1985	1990	1995	2000
Energy and Water Supply	1100	1200	1200	1300
Food Industry	1600	1700	1700	1700
Textile & Clothing Ind.	1900	1700	1600	1500
Wood & Paper	3000	3200	3300	3300
Chemical Industry	2100	2000	1500	1300
Quarrying & Build.Material	1200	1200	1100	1200
Metal & Electr. Equipm.	9100	9900	10200	10300
Building Industry	2900	2900	2900	2800
Retail & Wholesale Trade	12300	13800	15400	16900
Banking and Insurance	12900	14300	15300	15700
Transport & Communication	2900	3100	3500	800
Tourism	1200	1500	1700	000
Total	52200	56500	59400	61800

Table 6
Distribution of graduate employment over industrial branches

Industrial Branch	1985	1990	1995	2000
Energy and Water Supply	2.1	2.1	2.0	2.1
Food Industry	3.1	3.0	2.9	2.8
Textile & Clothing Ind.	3.6	3.0	2.7	2.4
Wood & Paper	5.7	5.7	5.6	5.3
Chemical Industry	4.0	3.5	2.5	2.1
Quarrying & Build.Material	2.3	2.1	1.9	1.9
Metal & Electr. Equipm.	17.4	17.5	17.2	16.7
Building Industry	5.6	5.1	4.9	4.5
Retail & Wholesale Trade	23.6	24.4	25.9	27.3
Banking and Insurance	24.7	25.3	25.8	25.4
Transport & Communication	5.6	5.5	5.9	6.1
Tourism	2.3	2.7	2.9	3.0
Total	100.0	100.0	100.0	100.0

3. The Survey

In order to collect more recent data about the employment market prospects for university graduates in trade and industry we decided to carry out an enquiry at the end of May, 1990. The main purpose of this survey was to describe, from the companies' point of view, the consequences of the obviously increased recruitment of university graduates by trade and industry. The reason for this was that recent information concerning the place of trade and industry in graduate employment had so far been derived either from more comprehensive surveys or from projections based on rather old data.

A translation of the questionnaire is given as an Annex to this report. It includes questions about :

- the branch of economic activity;
- the company's size;
- the number of university graduates employed in the company at two different points in time;
- the assumed need for graduates in the next years;
- the reasons for recruiting university graduates.

The questionnaire was sent to 300 companies in Austria which were selected in order to cover all relevant economic branches in trade and in industry and, as far as possible, all company sizes. About 25 per cent of the questionnaires were returned to the Institute and the respondent companies represented the employment of 2 860 university graduates. This means that the sample included more than 5 per cent of the entire target group. Nevertheless, it was necessary to revise the graduate employment figures in accordance with census data. In doing so, the respondents were weighted on the basis of two criteria: the distribution of higher education graduates over all trades and industries and the distribution of higher education graduates over companies of different size. This was done by estimating the employment figures of the relevant year on the basis of the corresponding figures for 1990 and 1985 in the questionnaire. The resulting estimates were then adjusted.

A weakness of this study is that we were unable to obtain reliable data on graduates employed in building and construction. We had to leave out this economic branch.

4. Characteristics of Companies with Increasing Graduate Employment

The sample turned out to reflect rather accurately changes in employment. In addition the results from this survey seem to be well in line with the above projections of the distribution of university graduates in trade and industry.

Table 7 illustrates the tremendous pressure of the supply of university graduates on smaller enterprises during the last 5 years. This pressure, revealed by the changing employment shares, is steadily declining in larger companies, and reaches its minimum in enterprises with 2 000-5 000 workers. We believe that such trends tend to be overestimated and therefore should not be taken as a basis for employment projections. But it would seem that these data do highlight the changing employment prospects for university graduates.

Table 7
Distribution of graduate employment by company size

Size	1985	1990	Growth Rate within Size
500 or less	13.3	27.3	281 %
500 - 750	17.8	21.5	125 %
750 - 1000	16.9	14.7	61 %
1000 - 1500	2.1	1.6	47 %
1500 - 2000	7.2	5.0	29 %
2000 - 5000	9.0	5.5	14 %
5000 or more	33.9	24.5	35 %
Total	100.0	100.0	86 %

In addition, the distribution of university graduates over the economic branches of trade and industry is -- at least for the order of magnitude -- in fair accordance with the projections presented above. Again retail and wholesale trade, as well as banking and insurance, are the most important sectors employing university graduates, followed by the metal industry and the manufacturing of electrical equipment.

It is, however, remarkable that in our survey -- contrary to other estimates -- the proportion of university graduates in the chemical industry is distinctively higher than in the other economic branches. We rechecked this peculiarity in additional talks with respondents, who confirmed the result that in fact the chemical industry had substantially increased its employment of university graduates during the last decade.

Table 8
Distribution of graduate employment by industrial branch

Industrial Branch	1985	1990	Growth Rate within Branch
Energy and Water Supply	5.2	3.1	13 %
Food Industry	1.0	.8	40 %
Textile & Clothing	.5	.4	46 %
Wood & Paper	2.1	1.2	4 %
Chemical Industry	13.8	11.3	52 %
Quarrying & Build. Materials	.6	.6	75 %
Metal & Electr. Equipment	31.9	21.8	27 %
Building Industry	-	-	-
Small scale production	1.6	1.1	35 %
Other Industry	1.9	1.0	1 %
Retail & Wholesale Trade	18.2	24.6	152 %
Banking and Insurance	16.3	29.2	233 %
Transport & communication	5.9	3.7	21 %
Tourism	1.2	1.3	100 %
Total	100.0	100.0	86 %

In order to obtain more revealing -- and more accurate -- results we recoded the economic branches of trade and industry by reducing the number of categories from 14 to 5. These 5 "aggregate economic branches" were :

- Retail & wholesale trade;
- Banking and insurance;
- Metal industry and electrical equipment;
- Chemical industry;
- Other trades and industries.

Another reason for this reorganisation of categories was to obtain more balanced reliabilities concerning the unweighted number of observations per category.

5. Distribution of graduate employment by field of study

As mentioned above, one of the most significant results of our study is the substantial increase in graduate employment over the last five years in enterprises with less than 500 employees. It is important to know whether all university graduates -- regardless of their field of study -- were concerned by this development. Table 9 shows that this was actually not the case: the strongest increases were those for graduates in business administration, law and technical engineering. For graduates in the humanities, the liberal arts or from other fields of study, it was rather the opposite.

In addition, it is interesting to note that, due to these additional recruitments of university graduates by smaller companies, the proportion employed in larger companies is declining, although there is no decrease in real numbers.

A more detailed analysis by economic branch shows that graduates in business administration and law were recruited in the banking and insurance sector whereas engineers took advantage of a remarkable increase in the recruitments in the retail and wholesale trades, the likely reason being that many trade professions are becoming more and more demanding in technical matters, for instance those selling EDP equipment.

Table 9
Distribution of graduate employment
by company size and field of study

Year 1985 Size	Field of Study				
	Economics	Technology	Law	Humanities	Others
- 500	20.0	11.9	9.8	1.6	8.5
- 750	21.0	12.2	27.1	27.8	20.7
- 1000	15.0	9.6	20.0	58.7	45.1
- 1500	3.7	1.2	1.9	.0	2.4
- 2000	4.8	9.2	12.1	.0	.0
- 5000	11.2	9.5	6.5	.8	6.1
> 5000	24.2	46.3	22.4	10.3	17.1
Sum	100.0	100.0	100.0	100.0	100.0
Totals	580	969	214	126	82

Year 1990 Size	Field of Study				
	Economics	Technology	Law	Humanities	Others
- 500	38.7	13.8	51.0	1.1	5.0
- 750	22.5	11.1	16.5	21.1	62.1
- 1000	10.1	12.6	13.2	65.1	17.4
- 1500	2.4	1.6	.8	.0	.6
- 2000	3.1	8.1	8.0	.6	.0
- 5000	5.1	7.8	2.9	.6	5.9
> 5000	18.3	45.0	7.9	11.4	9.1
Sum	100.0	100.0	100.0	100.0	100.0
Totals	1422	1213	522	175	126

Table 10
Distribution of graduate employment
by revised economic branch and field of study

Year 1985 Branch	Field of Study				
	Economics	Technology	Law	Humanities	Others
Trade	35.5	7.0	31.3	5.5	13.4
Banking	22.4	3.5 38.8	27.0	51.2	
Metal	15.7	50.8 7.0	13.5	18.3	
Chemical	11.4	14.1 4.2	44.4	3.7	
Others	14.8	24.6 18.7	9.5	13.4	
Sum	100.0	100.0	100.0	100.0	100.0
Totals	580	969 214	126	82	

Year 1990 Branch	Field of Study				
	Economics	Technology	Law	Humanit.	Others
Trade	33.5	11.4	12.1	.0	13.4
Banking	40.1	3.8	67.2	26.3	17.4
Metal	10.1	48.2	3.6	13.1	8.5
Chemical	8.1	15.2	3.3	48.6	3.5
Others	8.2	21.4	13.6	12.5	4.7
Sum	100.0	100.0	100.0	100.0	100.0
Totals	1422	1213	522	175	126

The data were also processed in order to obtain the proportions of university graduates from a certain field of study within enterprises of different size. Table 11 below shows the importance of the share of graduates in economics and business administration in the smaller companies, which has even increased over the last five years. The share of law graduates has also increased, but this increase concerned companies with less than 500 employees.

It also shows that the percentage of engineering graduates remained stable in larger enterprises with more than 1500 workers, but clearly dropped in smaller companies. This can first be explained as a consequence of the increased recruitments of business administration graduates in these firms, but it might be also an indication that there remains a still uncovered demand for engineering graduates.

The data also show the rather marginal place of the graduates in the humanities and the liberal arts and from other fields of study.

Looking at the proportions of graduates in different economic branches, the most salient result is the place of engineers in metal, chemical and other

industries. But the assumption made above about this group of graduates receives some support when the 1985 and 1990 figures are compared: the proportion of engineers actually declined in all economic branches over the last five years. This suggests, in fact, a severe shortage of these graduates

There are also declining shares of graduates in business administration and law in the retail and wholesale trade branch. This can be a simple consequence of increased recruitments of graduates from other disciplines. The other possibility is that the tremendous graduate employment growth in the banking and insurance sector may have induced some recruitment difficulties in the trade branch.

Table 11
Proportion of university graduates
from different fields of study within companies of different size

Year 1985 Field of Study	Companies' Size						
	- 500	- 750	-1000	-1500	-2000	-5000	>5000
Economics	44.3	34.9	26.0	55.0	19.5	36.7	21.1
Technology	44.3	33.7	27.8	30.0	62.2	52.0	67.6
Law	8.0	16.6	22.2	10.0	18.2	7.9	7.2
Humanities	.8	10.0	22.2	.0	.0	.6	2.0
Others	2.6	4.9	11.1	5.0	.0	2.8	2.1
Sum	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Totals	262	350	334	40	143	177	664
Year 1990 Field of Study	Companies' Size						
	- 500	- 750	-1000	-1500	-2000	-5000	>5000
Economics	54.8	40.6	26.6	56.7	23.8	35.5	29.0
Technology	16.7	17.1	28.4	33.3	53.0	46.8	60.8
Law	26.5	10.9	12.8	6.7	22.7	7.4	4.6
Humanities	.2	4.7	21.2	.0	.5	.5	2.2
Others	1.7	26.7	11.0	3.3	.0	9.8	3.5
Sum	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Totals	1003	789	538	60	185	203	898

Table 12
Proportion of university graduates from different fields of study within companies of different economic branches

Year 1985 Field of Study	Economic Branch				
	Trade	Banking	Metal	Chemical	Others
Bus. Admin.	57.4	40.2	14.4	24.4	22.2
Technology	17.5	10.5	78.1	50.6	73.2
Law	18.7	25.7	2.4	3.3	10.3
Humanities	1.9	10.5	2.7	20.7	3.1
Others	3.1	13.0	2.4	1.1	2.8
Sum	100.0	100.0	100.0	100.0	100.0
Totals	359	323	630	271	387
Year 1990 Field of Study	**Economic Branch**				
	Trade	Banking	Metal	Chemical	Others
Bus. Admin.	52.8	53.2	17.9	27.8	24.1
Technology	15.3	4.2	73.2	44.6	63.4
Law	7.0	32.7	2.4	4.1	14.6
Human.	.0	4.3	2.9	20.6	4.5
Others	24.9	5.5	3.6	2.9	3.3
Sum	100.0	100.0	100.0	100.0	100.0
Totals	903	1072	799	413	485

6. Estimating the Future Demand for University Graduates

In this survey the companies were asked whether they would need to recruit higher education graduates in the years to come until 1995. They were also asked to indicate the field of study required. We decided to use this rather simplistic approach because we believed that any attempt to obtain more detailed information (e.g. estimated numbers) would only lead to more formal precision without any improvement in the value of the results. Estimates of future company manpower demand are subject to many uncertainties. In addition their reliability differs widely, since it is quite difficult to arrive at a comprehensive view of a company's manpower demands. Data from the larger companies are, as a rule, much more reliable than those from small factories.

In spite of these difficulties, we did make estimates of the demand for university graduates over the next five years. This was done on the basis of the simple assumption that those companies which indicated an additional demand, for instance for engineering graduates, would need the same numbers as over the last five years. So the actual demand of the past period was weighted by the response to the question of whether this demand will continue until 1995.

With such a method, the estimated number of recruitments can only be as high as is was during the last five years. In addition, it does not reflect possible decreases in the recruitment needs of enterprises in the future. Nevertheless, the resulting figures do provide a good order of magnitude.

These data suggest that the overall number of new graduate recruits over the next five years will decrease by 7 percent. This represents a slight drop in the overall growth rate of trade and industry demand.

Tables 13 and 14 below show to what extent the different groups of university graduates or of companies will be affected by this overall decrease. It suggests that graduates in business administration and engineering are practically not affected. They obviously can expect absolutely unchanged job prospects. This is not the case for graduates in law, the humanities and liberal arts and, in particular, in the other fields of study. The figures indicate that their chances to find appropriate jobs will be substantially narrowing over the next five years. It should be noted here that these pessimistic results may be partly explained by the following considerations. The predominant demand in trade and industry is for university graduates in business administration and engineering. In fact, the recent employment figures show that graduates from other disciplines are -- possibly to a minor extent but, nevertheless -- also in demand. One reason may be that, for example, some companies, seeking a graduate in chemical engineering, finally decide to recruit a chemist with a liberal arts degree. There is also some support for the assumption that the strong demand for graduates in engineering and business administration induces an upgrading effect in companies' requirements.

Table 13
Extent to which graduates will be affected by the overall decrease in graduate recruitment growth rate, by field of study, over the next 5 years

Exposure: Difference in the number of actual past recruitments and estimated future recruitments within subgroup as a percentage of the total difference

Fields of Study	Exposure
Economics and Business Administration	0.0 %
Engineering	1.6 %
Law	25.4 %
Humanities and Liberal Arts	22.1 %
Other Fields of Study	50.9 %
Sum	100.0 %
Total Difference	122

The extent to which companies of different sizes are responsible for the overall decrease is shown in Table 14. The figures support the assumption that small companies with less than 500 workers will need to recruit university graduates to about the same extent as during the last five years. They will compete with companies with more than 1 500 and less than 5 000 workers. The firms of other sizes expect declining recruitment needs. The figures by economic branch show that the main sectors responsible for the overall decline will be retail and wholesale trade, as well as banking and insurance companies.

Table 14
Contribution of different groups of companies to the overall decrease in graduate recruitment by company size and and aggregate economic branch over the next 5 years

Contribution: Difference in the number of actual past recruitments and estimated future recruitments within sub-group as a percentage of total difference.

Company Size	Contribution
0 - 500	3.9
500 - 750	24.8
750 - 1 000	25.7
1 000 - 1 500	0.0
1 500 - 2 000	4.9
2 000 - 5 000	2.6
5 000 or more	38.1
Sum	100.0
Economic Branch	
Retail & Wholesale Trade Companies	39.9
Banking and Insurance Companies	43.8
Metal Industry and Electrical Equipment	1.6
Chemical Industry	9.9
Other Trades and Industries	4.6
Sum	100.0

However, it is important to underline again that the overall decrease of about 7 per cent in the recruitment of university graduates is rather small. The general conclusion which can be derived from our data is that companies expect a strong demand for applicants with a degree in business administration and engineering. Companies with less than 500 workers will continue to require additional university graduates from appropriate fields of study.

7. Reasons for the Recruitment of University Graduates

In the survey the companies were finally asked to indicate the reasons for recruiting university graduates in the period 1985 -1995. Responses had to be differentiated by field of study. Of course, every answer was checked against those to the other questions: responses could only be valid when the company had actually hired at least one university graduate from the indicated field of study during the last 5 years or planned to do so within the next 5 years.

Table 15
Reasons for recruitment of university graduates by field of study: distribution

	Economics	Technology	Law	Humanities	Others
Graduate Replacement	16.5	26.7	19.1	6.8	32.8
Non graduate Replacem.	14.9	6.3	11.6	2.3	11.5
New professional Tasks	22.6	22.8	17.8	27.3	6.6
Enlarged Tasks	19.6	21.8	20.4	27.3	8.2
Increased Requirements	18.2	20.4	16.9	22.7	6.6
Candidates available	7.2	1.0	11.6	6.8	18.0
Decreased Aspirations	1.1	1.0	2.7	6.8	13.1
Sum	100.0	100.0	100.0	100.0	100.0
Totals (Responses)	363	206	225	44	61

The seven reasons listed in the questionnaire can be seen as reflecting three main situations. The first two refer to the replacement of a staff member who left the company. The following three relate to the changing job requirements. The last two suggest a downgrading trend.

The figures suggest that the increased job requirements are the most important motive for recruiting university graduates. About 60 per cent of all answers fell into this group of reasons. Thirty per cent correspond to "replacements". It is interesting to note that the mere availability or the lower expectations of young graduates proved to be rather marginal reasons within the total recruitments. Only about 10 per cent fell into this group.

The table shows that graduate replacement is the main reason indicated for the recruitment of applicants from a technical university and for graduates of the "other" disciplines not differentiated in this study. It also shows that the main reasons for recruiting applicants with a degree in the humanities and the liberal arts belong to the second group, increased job requirements.

Obviously, for these graduates trade and industry are new fields of employment. Graduates in economics and business administration are often employed in jobs where their predecessors were non graduates. Finally, it confirms that there is a shortage of engineering graduates on the labour market.

Another way of presenting the data is to show the percentage of respondent companies that gave an affirmative answer to the question.

Table 16
Reasons for recruitment of university graduates by fields of study: affirmative answers

(Percentages: Share of companies giving affirmative responses to the reasons listed in the questionnaire among those companies which actually hired an university graduate of the respective field of study or intend to do so)

	Economics	Technology	Law	Humanities	Others
Graduate Replacement	55.5	77.2	44.9	13.4	52.4
Non Graduate Replacem.	51.4	18.3	27.7	3.4	25.2
New professional Tasks	75.4	66.4	41.9	49.9	11.1
Enlarged Tasks	65.9	62.7	47.8	49.4	14.5
Increased Requirements	61.3	58.7	39.4	40.3	10.3
Candidates available	24.5	3.5	27.1	12.1	30.5
Decreased Expectations	3.5	2.9	6.0	11.8	22.0
Totals (Respondents)	108	71	95	25	37

These data confirm the interpretations made above. They show that business administration and engineering graduates will continue to find jobs in trade and industry, in companies where staff members with similar educational background retire or at least withdraw from the company. It may also be that vacancies are on offer because these predecessors have reached the next level in the companies' hierarchy. The situation of those who graduated in the humanities and the liberal arts is quite different. Since they are, in most cases, the first in their discipline to be employed in trade and industry, they obviously cannot expect to find the same job opportunities. As a result, about 50 per cent of the companies which hired graduates from the humanities or the liberal arts, or intended to do so, indicated that the reason for these recruitments were "new professional tasks" or "increased requirements".

BELGIQUE
(Communauté flamande)

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BELGIUM
(Flemish Community)

André Bonte

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Avant-propos

Depuis 1988, les compétences en matière d'enseignement appartiennent, en Belgique, à la Communauté flamande, à la Communauté française, à la Communauté germanophone. Il n'existe pas de ministère de coordination de l'enseignement, comme par exemple en Allemagne, de sorte que, actuellement, l'enseignement dans les trois Communautés se développe de façon autonome.

Le présent rapport n'a trait qu'à une Communauté : la Communauté flamande (la Flandre), qui représente près de 60 pour cent de la population belge.

Chapitre 1

LA PARTICIPATION A L'ENSEIGNEMENT SUPERIEUR

La population universitaire a surtout connu un essor remarquable dans la haute conjoncture des années soixante (" the Golden Sixties"). Pendant les années soixante-dix, caractérisées par un affaiblissement de la vie économique, un ralentissement de la croissance se manifestait, suivi d'une chute des entrées à l'université pendant une période de cinq ans. Actuellement, une légère reprise de la croissance se manifeste, qui coïncide avec le redressement économique de la fin des années quatre-vingt. Dans une certaine mesure, la force d'attraction des études universitaires semble liée au développement de la conjoncture économique.

L'évolution de la conjoncture a également influencé le choix des études à l'université. Pendant la période de récession économique depuis le milieu des années soixante-dix, l'intérêt pour les études universitaires était en régression, tandis que l'orientation des études se déplaçait vers des filières ouvrant de bonnes perspectives d'emploi. Le renouveau économique à la fin des années quatre-vingt a non seulement stimulé la progression de la population universitaire, mais a également entraîné une orientation des études moins influencée par les perspectives sur le marché de l'emploi.

Le développement de la populaton estudiantine dans l'enseignement supérieur apparaît surtout clairement dans le mouvement des entrées en première année. Ainsi, entre 1981-1982, l'année de pointe, et 1988-1989 la population de première année a diminué de 5 pour cent environ. A l'université, la population de première année a toutefois connu encore une légère progression de 1.3 pour cent. Analysé par sexe, le nombre de jeunes gens est toutefois en régression, tandis que se dessine une progression remarquable des jeunes filles.

Le secteur universitaire représente actuellement presque 30 pour cent du nombre total des nouveaux étudiants de l'enseignement supérieur (contre 27.2 pour cent en 1981-1982).

Le recul important des effectifs en sciences de la culture à l'université coïncide avec un glissement de la population estudiantine vers les sciences humaines et sociales. Ici, surtout les sciences économiques, les sciences politiques et sociales et le droit ont connu un essor spectaculaire.

Le recul des étudiants en sciences exactes et en sciences médicales va de pair avec une progression continue du nombre des étudiants en sciences de l'ingénieur et en sciences agronomiques.

Ces glissements peuvent s'expliquer par l'évolution qui s'est profilée sur le marché de l'emploi, sauf pour les sciences politiques et sociales pour lesquelles les perspectives d'emploi restent faibles.

En Belgique, il n'y a pas d'épreuve d'admission à l'niversité. La sélection s'opère surtout en première année où le taux de réussite varie entre 45 et 50 pour cent en moyenne.

Des flux de nouveaux étudiants qui entament des études universitaires, un tiers seulement termine ses études sans retard. Presque deux étudiants sur dix terminent leurs études dans la même filière avec une, deux ou même plus d'années de retard. Finalement, seulement la moitié environ obtient le diplôme de fin d'études dans la même filière. Il en résulte que, à court terme, le flux des nouveaux diplômés ne suit nullement l'évolution des entrées à l'université (voir tableau I.4).

Dans l'enseignement supérieur non universitaire (désigné ci-après par l'abréviation E.S.N.U.), il existe à la fois des formations de type long (quatre années d'études au moins) et des formations de type court (dorénavant au moins trois années d'études). Entre les deux types de formation, il y a une différence, non seulement de durée, mais aussi de niveau.

Les filières de type long sont, d'après la loi, "de niveau universitaire" et ont pour objet de former un personnel hautement qualifié dont les connaissances scientifiques sont davantage orientées vers la pratique professionnelle que chez les universitaires. C'est le cas des ingénieurs industriels, des architectes, des licenciés en sciences commerciales et des licenciés-traducteurs ou licenciés-interprètes.

Les universités donnent une formation scientifique théorique. Dans les écoles supérieures, l'accent est davantage mis sur la formation scientifique pratique. Dans plusieurs pays, ces filières appartiennent au réseau universitaire (comme c'est le cas pour les *Polytechnics* au Royaume-Uni).

L'E.S.N.U. de type long, qui connaît dans son ensemble un développement remarquable, représente déjà presque 19 pour cent du nombre total des nouveaux étudiants de l'enseignement supérieur (contre seulement 11.7 pour cent au début des années quatre-vingt). Cette progression a eu lieu au détriment de la population universitaire et surtout de l'E.S.N.U. de type court.

Le taux de réussite en première année s'élève à presque 57 pour cent en moyenne à l'E.S.N.U. de type long. A l'université ce taux oscille entre 45 et 50 pour cent. On peut estimer que la proportion des étudiants qui obtiennent le diplôme de fin d'études atteint 60 pour cent (contre seulement 50 pour cent environ à l'université).

Les filières de l'E.S.N.U. de type court sont accessibles aux diplômés de toutes les sections de l'enseignement secondaire (enseignement général, enseignement technique, enseignement artistique et enseignement professionnel). La formation dans l'enseignement supérieur technique donne souvent un complément de qualification professionnelle aux diplômés sortant des sections homonymes de l'enseignement secondaire. Ce secteur de l'enseignement supérieur est toutefois également accessible aux diplômés d'autres sections.

Le type court recrute actuellement environ 52 pour cent des étudiants de l'enseignement supérieur (contre environ 61 pour cent au début des années quatre-vingt).

L'E.S.N.U. de type court est caractérisé par la taille réduite de ses établissements. D'une manière générale, les étudiants y sont aussi mieux encadrés sur le plan pédagogique qu'à l'université, de sorte que le seuil d'accès entre l'enseignement secondaire et l'enseignement supérieur est moins élevé qu'à l'université.

En première année de l'E.S.N.U. de type court, les résultats aux examens sont en moyenne sensiblement plus élevés qu'en première année de l'université. Le taux de réussite en première année y atteint 64 pour cent contre moins de 50 pour cent de réussite en moyenne à l'université. Les trois-quarts des étudiants obtiennent leur diplôme de fin d'études, dont 14 pour cent avec une ou deux années de retard (voir tableau I.4).

Depuis l'année de pointe 1981-1982, la population de première année de l'enseignement de type court est en régression. Dans ce secteur se dessinent toutefois des glissements importants. Les orientations "dures" de l'enseignement supérieur technique, mais surtout de l'enseignement économique ont connu une croissance explosive de leurs effectifs. Pendant la même période, le nombre de nouveaux étudiants a diminué sensiblement dans les orientations "douces" de l'enseignement supérieur social, paramédical et surtout pédagogique. Ces glissements sont étroitement liés à la position de ces filières sur le marché de l'emploi.

En Flandre, au cours de l'année scolaire 1981-1982, environ 40 000 élèves de l'enseignement secondaire sont passés à l'enseignement supérieur. Dans le développement de la population de première année de l'enseignement supérieur cela constituait une année record. Cinq années plus tard, le nombre d'étudiants de première année avait diminué de presque 9 pour cent par suite de la baisse constante du nombre des naissances. Au cours de l'année 1988-1989 une rupture inattendue dans la tendance descendante de la population de première année a été enregistrée à l'université, mais aussi dans l'E.S.N.U. de type court. Cependant, au cours de la période 1980-1988, le nombre de jeunes ayant atteint l'âge de dix-huit ans (l'âge moyen pour entamer des études supérieures) a baissé de près de 14 pour cent en Flandre. L'impact de la dénatalité sur le pouvoir d'attraction de l'enseignement supérieur s'est avéré moindre qu'on avait craint au début.

L'évolution de la population de première année varie fortement selon le secteur considéré de l'enseignement supérieur. Pendant la période 1982-1988, le nombre d'étudiants en première année d'université a baissé de 8 pour cent et dans l'E.S.N.U. de type court de presque 23 pour cent. Par contre, l'E.S.N.U. de type long a connu pendant ce temps une croissance continue et spectaculaire. Pendant la même période, la population de première année s'y est accrue de presque 55 pour cent en six ans. Toutefois, il semble que (provisoirement?) ce secteur a dépassé son point culminant.

Les chiffres traités ici se rapportent à l'université et à l'E.S.N.U. D'autres formations supérieures, comme par exemple l'enseignement supérieur artistique, l'enseignement supérieur maritime et l'Ecole royale militaire ne sont pas considérées ici.

L'université et surtout l'E.S.N.U. de type court ont été confrontés dans la période entre 1981-1982 et 1987-1988 avec une forte diminution de leur recrutement. Tout comme à l'université, on a pu y constater en 1988-1989 un léger regain d'intérêt : presque 5 pour cent. Dans l'E.S.N.U. de niveau

universitaire, c'est-à-dire de type long, l'évolution était totalement différente : une croissance forte et continue jusqu'en 1987-1988 (+ 54.7 pour cent), suivie d'une légère chute au cours de l'année suivante (- 2.4 pour cent).

Si l'on considère l'enseignement universitaire et l'E.S.N.U de type long ensemble, il apparaît que, malgré l'impact de la dénatalité, il y a eu une croissance constante du recrutement (+ 16.2 pour cent) en sept ans, au détriment des formations courtes de l'E.S.N.U. (- 18.8 pour cent) pendant la même période. Apparemment, la jeunesse vise plus haut qu'auparavant et le niveau de formation est de plus en plus élevé (voir tableau 1.1).

Analysés par sexe, des glissements bien plus importants apparaissent dans le flux de la population estudiantine. Le nombre de jeunes gens qui entrent à l'université ou à l'E.S.N.U. de type long augmente en sept ans de moins de 4 pour cent à peine ; le nombre de jeunes filles, par contre, progresse de presque 38 pour cent. Cet accroissement remarquable a lieu, comme signalé, au détriment de l'E.S.N.U. de type court qui perd en sept ans presque 17 pour cent de ses jeunes gens, mais 20 pour cent de ses jeunes filles (voir tableau 1.2.).

Ces chiffres moyens de développement couvrent naturellement des tendances très divergentes selon les filières.

Quand on compare le nombre d'étudiants de première année de l'enseignement supérieur avec celui du groupe d'âge de dix-huit ans (l'âge moyen d'entrée à l'enseignement supérieur) on obtient les chiffres de participation repris dans le tableau 1.3.

Près de 45 pour cent de la jeunesse flamande passe à l'enseignement supérieur. Pour les jeunes filles, le pourcentage de participation est même de 3 pour cent supérieur. Un élève de l'enseignement moyen sur cinq fréquente l'université ou une école supérieure de niveau universitaire. Mesurés aux normes de l'Europe occidentale, ce sont des chiffres très encourageants. En ce qui concerne la présence de sa jeunesse dans l'enseignement supérieur, la Flandre occupe sans doute une place de premier plan dans la Communauté européenne.

Tableau 1.1 - **Evolution récente du nombre des nouveaux étudiants par première année par type d'enseignement supérieur en Flandre**

Type d'enseignement supérieur	1981-82	%	1987-88	%	1988-89	%
Université	10 732	27.2	10 309	28.5	10 868	29.0
ESNU long	4 624	11.7	7 152	19.8	6 983	18.7
ESNU court	24 120	61.1	18 668	51.7	19 584	52.3
TOTAL	39 476	100.0	36 129	100.0	37 435	100.0

Source : Ministère de l'enseignement flamand. Service des statistiques de l'enseignement et Conseil inter-universitaire flamand.

Tableau 1.2 - **Evolution récente du nombre de nouveaux étudiants en première année par type d'enseignement supérieur et par sexe en Flandre**

Type d'enseignement supérieur	1981-82	1987-88	1988-89	Différence en % entre 1981-82 et 1988-89
Université	10 732	10 309	10 868	+ 1.3
- Garçons	6 153	5 252	5 484	- 10.9
- Filles	4 579	5 057	5 384	+ 17.6
ESNU long	4 624	7 152	6 983	+ 51.0
- Garçons	3 572	4 766	4 604	+ 28.9
- Filles	1 052	2 386	2 379	+ 126.1
ESNU court	24 120	18 668	19 584	- 18.8
- Garçons	9 258	7 324	7 701	- 16.8
- Filles	14 862	11 344	11 883	- 20.0
Total Enseignement supérieur	39 476	36 129	37 435	- 5.2
- Garçons	18 983	17 342	17 789	- 6.3
- Filles	20 493	18 787	19 644	- 4.1

Source : Ministère de l'enseignement flamand. Service des statistiques de l'enseignement et Conseil inter-universitaire flamand.

Tableau 1.3 - **Pourcentage des jeunes de dix-huit ans à l'enseignement supérieur en Flandre (1988-1989)**

Type d'enseignement supérieur	Garçons	Filles	Total
Université	12.9	13.2	13.0
E.S.N.U. type long	10.8	5.8	8.4
E.S.N.U. type court	18.1	29.1	23.5
Total	44.1	48.1	44.9

Source : Ministère de l'enseignement flamand. Service des statistiques de l'enseignement, Conseil inter-universitaire flamand et Institut national de statistique.

Tableau 1.4 - **Rendement des études dans l'enseignement supérieur en Flandre (en pourcentage)**

	Université	ESNU de type court
Entrées	100.0	100.0
Sorties		
Obtiennent leur diplôme		
- sans retard	32.3	62.6
- avec une année de retard	11.8	)
- avec deux années de retard	4.8	) 14.1
- avec au moins trois années de retard	0.9	
Diplômés	49.8	76.7
Abandons		
- après un an	24.3	)
- après deux ans	14.8	) 23.3
- après trois ans ou plus	11.1	
Total abandons	50.2	23.3

Source : Service consultatif pour les études, R.U. Gand.

Chapitre 2

LE CHOIX DES ETUDES A L'UNIVERSITE

Après l'année de pointe 1982-1983, les recrutements des universités flamandes ont connu une baisse constante. Après une chute de 8 pour cent au cours d'une période de cinq ans, une rupture inattendue s'est manifestée pendant l'année académique 1988-1989.

Cette progression surprenante du recrutement, de 5 pour cent en un an, constitue-t-elle un infléchissement de la tendance descendante des années passées ou s'agit-il d'une fluctuation statistique, due au hasard, dans une régression lente, irréversible du nombre d'étudiants ?

L'évolution globale de la population de première année recouvre des tendances divergentes selon les filières. Dès le début des années quatre-vingt, une croissance constante s'est manifestée dans différentes filières. C'est, entre autres, le cas pour les sciences économiques (une croissance record de presque 152 pour cent en neuf ans), la philologie des langues non occidentales (+ 138.6 pour cent) et les sciences politiques et sociales (+ 54.4 pour cent).

Par contre, une tendance à la stabilisation se manifeste dans les facultés de droit et les sciences pharmaceutiques. un autre phénomène est celui de la baisse constante de la population de première année depuis le début de la décennie dans, par exemple, la philologie classique (- 81.5 pour cent), les sciences dentaires (- 71.2 pour cent), l'éducation physique (- 69 pour cent) et les sciences psychologiques et pédagogiques (- 39 pour cent).

Les jeunes filles ont rattrapé leur retard à l'université à un rythme remarquablement rapide. Actuellement, presque autant de jeunes filles (49.5 pour cent) que de garçons commencent des études universitaires. Cependant, leur présence dans la plupart des filières continue à présenter des différences notables.

Depuis le début des années quatre-vingt, un nombre considérablement plus élevé de filles que de garçons choisissent les sciences religieuses, la faculté de philosophie et lettres, la psychologie, les sciences de l'éducation, la biologie, les sciences dentaires, les sciences pharmaceutiques et la kinésithérapie. Les étudiantes occupent, un à un, les derniers bastions masculins à l'université. Elles ont déjà une place prépondérante dans le droit (44.8 pour cent de jeunes filles), la médecine (54.4 pour cent), la médecine vétérinaire (52.9 pour cent) et la chimie (51.3 pour cent).

Le pourcentage d'étudiantes pour les études d'ingénieur civil est encore relativement faible (16.3 pour cent). Cependant, ce pourcentage constitue déjà un doublement du chiffre enregistré au début de la décennie.

Voilà les aspects les plus marquants du développement récent de la population de première année aux universités flamandes.

Tableau 2.1 - **Evolution du nombre d'étudiants de première année de nationalité belge, par groupe d'études, dans les instituts universitaires flamands**

Groupes d'études	1982-83	1987-88	1988-89	différence entre 82-83 et 88-89 (%)
Sciences théologiques	110	33	47	- 57.3
Sciences de la culture	2 090	1 027	1 200	- 42.6
Sciences humaines et sociales	4 474	5 529	5 571	+ 24.5
Sciences fondamentales	1 471	939	970	- 34.1
Sciences médicales	1 981	1 515	1 663	- 16.1
Sciences appliquées	720	795	899	+ 24.9
Sciences agronomiques	361	471	518	+ 43.5
total	11 207	10 309	10 868	- 3.0

Source : Conseil inter-universitaire flamand.

1. Tendances

Le développement ultérieur de la population de première année est déterminé, d'une part, par l'évolution de la base démographique du recrutement universitaire, c'est-à-dire le chiffre des naissances et, d'autre part, par l'évolution du passage de l'enseignement secondaire à l'université.

Entre 1964, l'année au chiffre de naissances le plus élevé, et 1985, le point le plus bas, le nombre de naissances en Flandre a baissé d'environ 30 pour cent. Trois quarts des étudiants de première année de l'année académique écoulée sont nés en 1970. Cela signifie que les universités, et cela jusqu'après l'an 2000, recruteront leurs étudiants dans des années de plus en plus maigres. Cependant, l'effet de la bombe à retardement démographique peut être compensé par un accroissement du nombre d'élèves de l'enseignement secondaire passant à l'université.

Environ 13 pour cent des jeunes flamands âgés de dix-huit ans entament actuellement des études universitaires. Il va de soi que le potentiel de croissance peut être augmenté en faisant appel aux jeunes issus de milieux socio-économiques faibles, insuffisamment représentés à l'université. En revanche, on constate qu'un débutant sur quatre n'est pas à sa place à l'université, par manque de capacités requises. Le passage à l'université ne peut probablement pas s'accroître considérablement sans que la qualité du recrutement baisse. Par conséquent, les perspectives d'avenir du recrutement universitaire sont loin d'être brillantes.

Les glissements dans le choix des études effectué par les étudiants de première année sont en général étroitement liés aux fluctuations de la valeur marchande du diplôme. Les orientations d'études qui ont la cote continuent à attirer des étudiants. Par contre, dans les orientations à perspectives d'avenir incertaines, le nombre d'étudiants baisse. Il n'y a que quelques orientations d'études qui échappent à cette loi rigoureuse. Ces tendances se manifestent surtout clairement chez les jeunes gens. Généralement, les jeunes filles attachent moins d'importance dans le choix de leurs études aux possibilités plus ou moins favorables de trouver un emploi dans leur secteur.

Ces dernières années, les perspectives d'avenir d'orientations d'études à possibilités d'emploi défavorables se sont considérablement améliorées. Cela s'explique par la forte baisse du nombre d'étudiants dans ces orientations, mais aussi par le renouveau économique récent. Ainsi, un nombre croissant de jeunes diplômés ont trouvé un emploi dans des domaines qui traditionnellement ne sont pas dans le prolongement de leur formation. C'est par exemple, le cas dans les sciences religieuses et la philologie germanique.

2. Orientations d'études

Dans les sciences religieuses le nombre de débutants a baissé d'environ 70 pour cent en neuf ans. A côté de leur champ d'activités traditionnel dans l'enseignement de la religion, ces diplômés trouvent de plus en plus un emploi en dehors de l'enseignement, dans les services pastoraux des hôpitaux et des institutions psychiatriques et dans la formation socio-culturelle. L'organisation et l'encadrement de sessions de réflexion, dans le cadre de l'école ou en dehors de celle-ci, ouvrent aussi de nouveaux débouchés. Les sciences éthiques, axées sur le courant laïc, connaissent une baisse encore plus considérable (- 85.5 pour cent). En dehors de l'enseignement de la morale non confessionnelle, les moralistes cherchent surtout des débouchés comme conseiller moral dans les centres de guidance morale, les prisons et les hôpitaux.

Dans les orientations philologiques, le nombre d'étudiants de première année a été réduit de plus de la moitié avant 1989, surtout à cause des possibilités d'avenir vraiment défavorables dans l'enseignement, leur terrain d'activité principal. Auparavant, plus de 90 pour cent des philologues trouvaient des débouchés dans l'enseignement. Actuellement, de plus en plus de germanistes et de romanistes cherchent un emploi dans les entreprises. La réforme récente des programmes d'études renforcera certainement cette tendance. Par rapport à l'année académique passée, le nombre d'étudiants de première année en philologie germanique et romane a augmenté de plus d'un tiers. Par contre, on n'observe pas de renouveau d'intérêt dans les secteurs de l'histoire et de la philologie classique. Cette dernière a même perdu plus de 80 pour cent de ses étudiants de première année en cinq ans.

La philologie des langues non occidentales est devenue maintenant une orientation à succès, malgré les possibilités d'avenir incertaines. Après la philologie germanique, elle est maintenant numériquement la seconde orientation de philosophie et lettres. Après une croissance ininterrompue depuis le début de la décennie, la seconde moitié des années quatre-vingt est marquée par une tendance à la stabilisation de la population estudiantine de la faculté de droit. c'est également le cas pour la criminologie. par contre, l'attrait des sciences politiques et sociales continue à croître depuis 1979-80.

Tableau 2.2 - **Evolution du nombre d'étudiants de première année de nationalité belge, par orientation d'études aux institutions universitaires flamandes**

Orientations d'études	1982-83	1987-88	1988-89
1. **Sciences théologiques**			
- théologie	-	-	1
- sciences religieuses	110	33	46
2. **Sciences de la culture**			
- philosophie	109	62	4
- sciences éthiques	45	9	11
- histoire	329	151	159
- philologie classique	167	39	33
- philologie germanique	683	324	443
- philologie romane	423	134	179
- philologie des langues non occidentales	123	185	198
- histoire de l'art, archéologie et musicologie	211	123	131
3. **Sciences humaines et sociales**			
- droit	1 561	1 827	1 750
- criminologie	69	99	99
- sciences politiques et sociales	569	601	673
- sciences économiques	1 476	2 419	2 541
- psychologie et sciences de l'éducation	799	583	508
4. **Sciences fondamentales**			
- mathématiques-informatique	616	396	332
- physique	107	98	103
- chimie	264	276	320
- biologie	323	138	178
- géographie	108	16	27
- géologie	53	15	10
5. **Sciences médicales**			
- médecine	783	715	805
- sciences dentaires	178	90	91
- pharmacie	370	305	357
- médecine vétérinaire	185	135	157
- education physique	320	136	121
- kinésithérapie et réadaptation motrice	145	134	132
6. **Sciences appliquées**			
- ingénieur civil	720	795	855
- architecture	-	-	44
7. **Sciences agronomiques**			
- ingénieur	361	471	518
total	11 207	10 309	10 868

Source : Conseil inter-universitaire flamand.

Les sciences économiques forment depuis le milieu des années quatre-vingt l'orientation d'études qui attire le plus grand nombre d'étudiants de première année. Malgré le développement énorme du nombre d'étudiants (+ 151.8 pour cent en neuf ans), les possibilités d'emploi restent particulièrement favorables, surtout grâce à l'amélioration récente de la conjoncture économique. La présence d'étudiantes dans cette orientation reste cependant plutôt faible : moins de 40 pour cent de la population de première année.

A la faculté des sciences le nombre d'étudiants de première année a augmenté par rapport à l'année académique passée uniquement dans les sections de chimie (+ 15.9 pour cent), de biologie (+ 28.9 pour cent) et de géographie (+ 68.7 pour cent).

Par contre, la population estudiantine de la section de physique stagne. Pour la section de géologie on n'a enregistré cette année que dix débutants, répartis sur trois universités.

Un fait surprenant est l'effritement continu, depuis le milieu des années quatre-vingt, des nombres d'étudiants dans le groupe d'études mathématiques-informatique, où les jeunes filles sont nettement en minorité (environ 36 pour cent). Dans ce groupe d'études, cependant bien coté sur le maarché de l'emploi, la population de première année a presque diminué de moitié en cinq ans. Probablement, les forts en mathématiques sont attirés par les facultés d'ingénieur, plus prestigieuses.

Dans les facultés de médecine, des tendances très divergentes se dessinent. Sous la pression du nombre croissant d'étudiantes, la population estudiantine de la faculté de médecine s'accroît de nouveau très vite. Les campagnes de dissuasion semblent avoir eu peu d'effet sur le choix des étudiantes qui représentent déjà presque 55 pour cent de la population de première année en faculté de médecine.

Par contre, la dentisterie a perdu en sept ans presque trois quarts de sa population de première année. En 1988-89, 91 étudiants seulement, partagés entre cinq institutions universitaires, ont entamé des études de dentisterie. La tendance très forte à la féminisation de la dentisterie est également remarquable : plus de 82 pour cent des étudiants de première année sont des jeunes filles.

Des fluctuations très fortes se sont toujours produites dans l'évolution du nombre d'étudiants en pharmacie. Après une tendance à la baisse depuis le milieu des années quatre-vingt, la population de première année a de nouveau augmenté de 17 pour cent par rapport à l'année académique précédente. Dans cette orientation, les jeunes filles sont traditionnellement très fortement représentées. La population de première année compte près de 80 pour cent d'étudiantes.

Dans l'orientation surpeuplée de la médecine vétérinaire, la population estudiantine continue à fluctuer autour d'une moyenne de 150 débutants par an. Le besoin de nouveaux médecins vétérinaires en Flandre est, selon l'estimation, trois fois moindre. A beaucoup de ces étudiants, il ne sera pas possible de

monnayer leurs études, longues, difficiles et chères, par une pratique vétérinaire rentable. Dans ce secteur comme dans les autres orientations médicales, les étudiantes sont la majorité (presque 53 pour cent).

L'éducation physique a perdu en huit ans presque 70 pour cent de sa population de première année. Pour le moment, l'orientation de kinésithérapie et de réadaptation motrice, non axée sur l'enseignement, attire plus d'étudiants que l'éducation physique dont les possibilités d'emploi sont faibles dans l'enseignement.

L'orientation des études d'ingénieur civil ouvre encore de loin les meilleures possibilités d'emploi. Il semble néanmoins que cette orientation ait dépassé (provisoirement ?) son point culminant en ce qui concerne sa force d'attraction à l'université. Ces étudiants ne peuvent pas être financés et leur études n'offrent pas de possibilités d'avenir dans une pratique d'architecte indépendante. La formation en architecture de niveau universitaire reste (provisoirement?) réservée aux instituts supérieurs d'architecture.

Tableau 2.3 - **Population de première année de nationalité belge subdivisée par sexe aux institutions universitaires flamandes (1988-89)**

Orientations d'études	jeunes gens	jeunes filles	total	% jeunes filles
1. **Sciences théologiques**				
- théologie	1	-	1	100.0
- sciences religieuses	16	30	46	65.2
2. **Sciences de la culture**				
- philosophie	32	14	46	30.4
- sciences éthiques	5	6	11	54.0
- histoire	95	64	159	40.3
- philologie classique	14	19	33	57.6
- philologie germanique	155	288	443	65.0
- philologie romane	40	139	179	77.7
- philologie des langues non occidentales	62	136	198	68.7
- histoire de l'art, archéologie et musicologie	52	79	131	60.3
3. **Sciences humaines et sociales**				
- droit	774	976	1 750	55.8
- criminologie	50	49	99	49.5
- sciences politiques et sociales	334	339	673	50.4
- sciences économiques	1 527	1 014	2 541	39.9
- psychologie et sciences de l'éducation	133	375	508	73.8
4. **Sciences fondamentales**				
- mathématiques-informatique	212	120	332	36.1
- physique	68	35	103	34.0
- chimie	156	164	320	51.3
- biologie	81	97	178	54.5
- géographie	10	17	27	63.0
- géologie	4	6	10	60.0
5. **Sciences médicales**				
- médecine	367	438	805	54.4
- sciences dentaires	16	75	91	82.4
- pharmacie	73	284	357	79.6
- médecine vétérinaire	74	83	157	52.9
- education physique	67	54	121	44.6
- kinésithérapie et réadaptation motrice	44	88	132	66.7
6. **Sciences appliquées**				
- ingénieur civil	716	139	855	16.3
- architecture	22	22	44	50.0
7. **Sciences agronomiques**				
- ingénieur	284	234	518	45.2
total	5 484	5 384	10 868	49.5

Source : Conseil inter-universitaire flamand.

Chapitre 3

LE CHOIX DES ETUDES DANS L'ENSEIGNEMENT SUPERIEUR NON UNIVERSITAIRE (ESNU)

1. L'enseignement supérieur de type long

L'enseignement supérieur de type long, à caractère scientifique plus axé sur la pratique, est de niveau universitaire. Il comprend les cinq orientations d'études suivantes :

- ingénieur industriel (quatre ans) ;
- sciences commerciales (licencié et ingénieur commercial) : quatre ou cinq ans ;
- traducteur-interprète (licencié) : quatre ans ;
- architecture (cinq ans) et
- enseignement supérieur maritime (quatre ans + années de stage).

Les trois premières orientations ont connu dans les années quatre-vingt une expansion explosive. La part de l'ESNU de type long dans la population de première année de l'enseignement supérieur a augmenté en sept ans de 11.7 pour cent à 18.7 pour cent. Entre temps, la part de l'université n'a augmenté que de 27.2 pour cent à 29 pour cent.

Les écoles supérieures industrielles, où la formation d'ingénieur est beaucoup moins exigeante qu'à l'université et où il n'y a pas d'examen d'admission, attirent de loin le plus grand nombre d'étudiants. Par rapport au début des années quatre-vingt, la population de première année a augmenté de presque 90 pour cent en huit ans. Pendant le même laps de temps, l'augmentation du nombre d'étudiants de première année des facultés d'ingénieur dans les universités flamandes n'a pas atteint 30 pour cent. Tout comme dans les écoles universitaires d'ingénieur, une stagnation du recrutement commence à s'y dessiner.

La participation des jeunes filles dans le dernier recrutement des instituts supérieurs industriels reste faible : à peine 16.1 pour cent (16.3 pour cent aux écoles universitaires d'ingénieur). Cela signifie cependant un grand pas en avant. Au début des années quatre-vingt le pourcentage d'étudiantes en première année de l'orientation d'ingénieur industriel n'atteignait pas 5 pour cent (contre presque 7 pour cent pour les étudiantes de l'orientation d'ingénieur civil).

Les écoles supérieures économiques ont presque le même rythme de croissance rapide que les facultés universitaires des sciences économiques : en neuf ans la population de première année y a plus que doublé. Les instituts supérieurs économiques, où les chances de réussite sont sensiblement plus élevées qu'aux facultés universitaires, attirent actuellement plus d'étudiants

que les universités : 2 667 étudiants en première année des sciences commerciales contre 2 541 dans les sciences économiques à l'université. La part des jeunes filles dans les recrutements les plus récents se situe pour les deux orientations à un niveau comparable : environ 40 pour cent. Une croissance constante se manifeste également dans les instituts supérieurs de traducteurs et d'interprètes. En neuf ans la population de première année a presque doublé. Cette croissance impressionnante se fait apparemment au détriment des facultés universitaires de philosophie et lettres, où la population estudiantine a été réduite de moitié en cinq ans. Tout comme dans les orientations philologiques de l'université, la proportion de jeunes filles est très forte parmi les étudiants des instituts d'interprètes et de traducteurs : presque 80 pour cent des étudiants de première année sont des jeunes filles.

Tableau 3.1 - **Evolution récente de la population de première année dans l'enseignement supérieur de type long en Flandre**

Filières	1981-82	1987-88	1988-89	différence en % entre 1981-82 et 1988-89
ingénieur industriel	2 785	3 892	3 612	+ 29.7
architecte	319	328	296	- 7.2
sciences commerciales	668	1 782	1 923	+ 187.9
traducteur-interprète	852	1 150	1 152	+ 35.2
total	4 624	7 152	6 983	+ 51.0

Source : Ministère de l'enseignement flamand. Service des statistiques de l'enseignement.

Tableau 3.2 - **Population de la première année d'études de l'enseignement supérieur de type long en Flandre par orientation d'études et par sexe (1988-89)**

Orientations d'études	garçons	filles	total	% de filles
ingénieur industriel	3 030	582	3 612	16.1
architecte	180	116	296	39.2
sciences commerciales	1 133	790	1 923	41.1
traducteur-interprète	261	891	1 152	77.3
total	4 604	2 379	6 983	34.1

Source : Ministère de l'enseignement flamand.
Service des statistiques de l'enseignement.

2. L'enseignement supérieur de type court

L'enseignement supérieur de type court est un grand conglomérat de formations très fortement orientées vers la profession. Par sa spécialisation marquée, l'enseignement supérieur de type court a été morcelé en un trop grand nombre d'orientations d'études qui, principalement dans l'enseignement supérieur économique, sont destinées à des terrains de travail où les diplômes sont dans une large mesure interchangeables. L'ESNU de type court englobe actuellement une cinquantaine d'orientations d'études nettement profilées, les options de spécialisation à l'intérieur de chacune de ces orientations non comprises.

Environ 60 pour cent des étudiants de première année de l'ESNU de type court sont des jeunes filles. La présence des étudiantes est principalement concentrée dans l'enseignement supérieur pédagogique (81.4 pour cent), l'enseignement supérieur paramédical (79.9 pour cent) et de l'enseignement supérieur social (74.5 pour cent).

Pendant la période 1982-89, la part de l'ESNU de type court dans la population totale de première année de l'enseignement supérieur a baissé de 61.1 pour cent à 52.3 pour cent. Pendant ce temps, la part de l'université, mais surtout de l'enseignement supérieur de type long, a augmenté de façon continue.

Jusqu'au début des années quatre-vingt, les écoles normales attiraient de loin le plus grand nombre d'étudiants de l'ESNU de type court. Par suite des difficultés sérieuses en matière de débouchés dans l'enseignement, l'intérêt s'est déplacé progressivement vers les formations courtes de gradués de l'enseignement supérieur économique : l'afflux d'étudiants a fait de l'enseignement supérieur économique le segment le plus fort et le plus dynamique de type court. Depuis le début des années quatre-vingt, la population de première année y a plus que doublé. Cette forte expansion s'est faite visiblement au détriment des écoles normales, mais aussi des écoles supérieures de sciences sociales et des orientations paramédicales. Dans l'enseignement supérieur pédagogique (les écoles normales), les nouveaux recrutements se sont accrus jusqu'en 1981-82. Puis il y a eu effritement continu de la population : en six ans, les écoles normales ont perdu presque 70 pour cent de leurs étudiants de première année. Cependant, l'année passée, un regain inattendu de presque 40 pour cent a été enregistré.

Ces derniers temps, des banques et d'autres établissements financiers ont attiré des diplômés de l'enseignement supérieur pédagogique. Apparemment, les aptitudes communicatives et linguistiques des régents et des régentes sont très appréciées dans les banques.

L'enseignement paramédical reste numériquement le troisième secteur le plus important de l'ESNU de type court. Depuis l'année de pointe 1981-82, le nombre d'étudiants de première année y baisse continuellement. Le nursing, où il y a pourtant une pénurie alarmante de diplômés, a perdu plus d'un quart de sa population de première année en cinq ans. Cependant, depuis deux ans, un léger accroissement de l'intérêt pour le nursing se manifeste. A l'opposé de la pénurie dans le domaine du nursing, on constate un surplus de kinésistes, logopèdes (orthophonistes), chimistes cliniques et diététiciens sur le marché

de l'emploi. En effet, tous ces diplômés éprouvent des difficultés à trouver des débouchés. Par contre, pour les ergothérapeutes, les chances de trouver un emploi se sont sensiblement améliorées.

Tout comme dans l'enseignement supérieur paramédical, l'année 1981-82 a été une année record pour le recrutement dans les écoles supérieures de sciences sociales. Après cette année, la force d'attraction de ces écoles a également baissé d'une manière constante : baisse d'un quart en sept ans.

Les diplômés de l'enseignement supérieur social cherchent en majorité des débouchés dans le secteur non marchand, dont la force d'attraction a fortement baissé.

Cependant, pour les assistants sociaux et les assistantes sociales, une légère amélioration des possibilités d'emploi se manifeste dans le domaine de l'aide sociale. Par les mesures récentes des autorités publiques, les débouchés des éducateurs et des éducatrices (gradué(e)s en orthopédagogie) dans le domaine de l'aide sociale spéciale aux jeunes et aux handicapés ont été fortement élargis et on doit déjà faire face à une sérieuse pénurie de spécialistes.

Dans les graduats de l'enseignement supérieur technique, les nouveaux recrutements se sont accrus de presque 70 pour cent par rapport au début des années quatre-vingt. La présence d'étudiantes dans ces orientations reste singulièrement faible, tout comme dans les orientations industrielles de l'enseignement secondaire technique.

Dans les quatre orientations numériquement les plus importantes, la participation des jeunes filles n'est élevée que dans la section de chimie (presque 53 pour cent) et dans la section des industries graphiques (40.2 pour cent). Dans les orientations d'électronique et de mécanique ou d'électromécanique on ne compte même pas une jeune fille sur cent étudiants.

L'enseignement supérieur agricole ne comprend que deux orientations d'études : architecture des jardins et du paysage et agriculture et horticulture. Cette dernière orientation n'a été créée qu'en 1986-87 et compte déjà 70 pour cent des étudiants de première année de l'enseignement supérieur agricole. Le nombre d'étudiants de première année en architecture des jardins et du paysage a presque été réduit de moitié par rapport à l'année 1979-80. Dans les deux orientations agricoles, les étudiantes sont assez faiblement représentées. Parmi les futurs architectes-paysagistes et architectes de jardins, il n'y a même pas 30 pour cent de jeunes filles ; en agriculture et horticulture, il y en a à peine 16 pour cent. L'enseignement supérieur artistique ne doit pas être confondu avec l'enseignement artistique supérieur, qui groupe la musique, les arts plastiques et les arts dramatiques. Il ne possède qu'une orientation d'études numériquement importante : l'architecture d'intérieur.

Après avoir atteint son point le plus bas au milieu des années quatre-vingt, cette orientation connaît un regain d'intérêt. Presque 65 pour cent des étudiants de première année sont des jeunes filles.

Tout comme à l'université, le choix des études à l'ESNU reste axé sur le marché de l'emploi. La force d'attraction des orientations d'hygiène et d'aide

sociale, qui ouvrent cependant de nouvelles perspectives d'avenir, continue à baisser, tandis que le nombre d'étudiants dans les orientations industrielles, financièrement plus intéressantes, continue à augmenter.

Le secteur hospitalier et les services d'aide à la jeunesse et aux handicapés doivent faire face actuellement à une inquiétante pénurie de personnel. Des glissements dans le choix des études vers ces orientations restent donc souhaitables.

Tableau 3.3 - **Evolution récente de la population de première année de l'enseignement supérieur de type court en Flandre**

Secteur de l'enseignement supérieur	1981-82	1987-88	1988-89	différence en % entre 1981-82 et 1988-89
technique	2 210	2 583	2 294	+ 3.8
agricole	190	265	267	+ 40.5
economique	6 715	8 766	9 094	+ 35.4
paramédical	4 512	2 827	2 767	- 38.7
social	1 831	1 121	1 019	+ 44.3
artistique	47	480	500	+ 5.3
pédagogique	8 187	2 626	3 643	- 55.5
total	24 12	18 668	19 58	- 18.8

Source : Ministère de l'enseignement flamand. Service statistiques d'enseignement.

Tableau 3.4 - **Population de première année de l'enseignement supérieur de type court en Flandre par secteur et par sexe (1988-89)**

Secteur de l'enseignement supérieur	jeunes gens	jeunes filles	total	% de jeunes filles
technique	1 837	457	2 294	19.9
agricole	213	54	267	20.2
economique	3 908	5 186	9 094	57.0
paramédical	556	2 211	2 767	79.9
social	260	759	1 019	74.5
artistique	251	249	500	49.8
pédagogique	676	2 967	3 643	81.4
total	7 701	11 883	19 584	60.7

Source : Ministère de l'enseignement flamand. Service statistiques d'enseignement.

Chapitre 4

LES UNIVERSITAIRES NOUVELLEMENT DIPLOMÉS

7 080 diplômes de fin d'études universitaires (après le second cycle) ont été délivrés en Flandre en 1988 : 6 914 à des étudiants flamands et à peine 166 (c'est-à-dire 2.3 pour cent) à des étrangers. Par rapport à 1980, cela représente encore un accroissement d'environ 28 pour cent en huit ans pour les diplômés flamands. Le rythme de croissance commence cependant à diminuer. Après 1988, le nombre de nouveaux diplômés diminuera progressivement. Les chefs de file dans l'expansion du nombre des diplômes sont actuellement la philologie des langues non occidentales (+ 253 pour cent en huit ans), les sciences économiques (+ 112.9 pour cent) et les sciences agronomiques (+ 91.2 pour cent).

Malgré le recul constant du nombre d'étudiants de première année dans les universités flamandes après 1982-83, cinq ans plus tard le nombre de nouveaux diplômés a encore augmenté pour atteindre le chiffre de 6 914. Ceci semble constituer, à moyen terme, un sommet historique. Par contre, la proportion de diplômés étrangers semble être assez stable et s'élevait à 2.3 pour cent en 1988.

Les facultés des sciences économiques et économiques appliquées continuent à évoluer favorablement. Depuis 1980, le nombre d'économistes et d'ingénieurs commerciaux nouvellement diplômés a plus que doublé. Pour le moment, cette faculté est numériquement la plus importante dans le système universitaire flamand.

Depuis le début des années quatre-vingt, le droit reste la deuxième orientation d'études du point de vue de son importance numérique. Le nombre de nouveaux diplômés a toutefois augmenté moins vite (+ 42 pour cent) que dans d'autres filières à forte croissance.

Les sciences politiques et sociales ont connu une croissance plus forte : le nombre de nouveaux diplômés y a progressé de plus de 80 pour cent. A l'université, il semble en général y avoir un rapport entre la force d'attraction d'une filière et les perspectives d'avenir sur le marché de l'emploi pour les jeunes diplômés de cette filière. Cette règle ne semble pas s'appliquer aux sciences sociales dont les diplômés sont confrontés avec des difficultés sérieuses sur le marché de l'emploi. Par contre, en criminologie, le nombre de nouveaux diplômés est en régression.

Après un sommet en 1984, le nombre de psychologues et de pédagogues nouvellement diplômés est constamment en régression. Seuls les psychologues dont la formation est orientée vers les entreprises trouvent encore facilement

un emploi. C'est précisément dans cette finalité que le nombre d'étudiants a encore fortement augmenté ces dernières années.

Dans toutes les filières de la faculté de philosophie et lettres, à une exception près, l'effectif des nouvelles promotions continue à diminuer après le sommet du milieu des années quatre-vingt. En cinq ans, le nombre d'étudiants de première année a diminué de plus de la moitié. La même tendance se dessine en sciences religieuses. Le nombre de nouveaux diplômés doit dès lors continuer à régresser à moyen terme.

Dans la faculté des sciences, la tendance est également à la diminution numérique des promotions, sauf dans le groupe mathématiques-informatique et en chimie.

En 1980, la médecine constituait encore l'orientation la plus peuplée. Par le recul du nombre d'étudiants, elle a rétrogradé à la troisième place. Actuellement, environ 37 pour cent des médecins flamands nouvellement diplômés sont des femmes. Parmi les étudiants de première année de médecine, on compte même déjà près de 52 pour cent d'étudiantes.

En sciences dentaires, après le sommet de 1980 avec 274 nouveaux dentistes, le nombre de nouveaux diplômés est retombé en 1988 à 100 licenciés en sciences dentaires à peine. Par la tendance à la baisse du recrutement, ce chiffre continuera à diminuer à moyen terme. Par contre, pour les sciences pharmaceutiques, le nombre de pharmaciens nouvellement diplômés a été le plus bas en 1980, avec à peine 140 unités. Depuis, les nouvelles promotions sont passées à 263 unités en 1988. A partir de l'année prochaine, on s'attend à une nouvelle baisse cyclique des promotions, comme ce fut le cas dans la seconde moitié des années soixante-dix.

Depuis cinq ans, le nombre de médecins vétérinaires nouvellement diplômés en Flandre semble s'être stabilisé à environ une centaine par an.

Pour l'éducation physique et la kinésithérapie, l'année 1984 fut un sommet en ce qui concerne le nombre de diplômes délivrés. Depuis quatre ans, les promotions dans ces deux filières ont déjà diminué d'environ un quart. La baisse du recrutement au cours de ces dernières années laisse prévoir qu'ici aussi les promotions continueront à diminuer à moyen terme. Ce sera surtout le cas dans l'éducation physique.

Le rythme de croissance pour les ingénieurs civils (+ 31.4 pour cent en huit ans) est à peine supérieur à la moyenne universitaire. Dans la faculté des sciences agronomiques, le nombre d'ingénieurs nouvellement diplômés s'est accru plus rapidement au cours de cette même période (+ 91.2 pour cent).

Comme signalé déjà, les tendances dans le mouvement des cohortes de diplômés par filière suivent seulement à moyen terme les tendances des entrées à l'université. Le retardement dans le déroulement des études en est la cause principale : plus d'un tiers des diplômés obtiennent le diplôme avec un retard d'au moins un an.

Tableau 4.1 - **Evolution du nombre de nouveaux diplômés flamands de l'enseignement universitaire, par groupe d'études**

Groupes d'études	1980	1984	1988	différence en % entre 1980 et 1988
sciences théologiques	63	98	91	+ 44.4
sciences de la culture	952	1 166	1 085	+ 14.0
sciences humaines et sociales	1 873	2 491	2 895	+ 54.6
sciences fondamentales	571	613	658	+ 15.2
sciences médicales	1 373	1 535	1 342	- 2.3
sciences appliquées	442	496	581	+ 31.4
sciences agronomiques	137	240	262	+ 91.2
total	5 411	6 639	6 914	+ 27.8

Tableau 4.2 - **Evolution du nombre de nouveaux diplômés flamands de l'enseignement universitaire, par orientation d'études**

Orientations d'études	1980	1984	1988
1. **Sciences théologiques**			
- théologie	18	14	21
sciences religieuses	45	84	70
2. **Sciences de la culture**			
- philosophie	38	44	43
- ethique	38	26	17
- histoire	137	193	188
- philosophie classique	56	90	71
- philosophie germanique	411	435	346
- philosophie romane	133	159	179
- philosophie des langues			
- non occidentales	34	69	120
- histoire de l'art, archéologie et musicologie	105	150	121
3. **Sciences humaines et sociales**			
- droit	612	753	869
- criminologie	121	156	123
- sciences politiques et sociales	213	324	348
- sciences économiques	526	776	1 120
- psychologie et sciences de l'éducation	401	482	435
4. **Sciences fondamentales**			
- mathématiques-informatique *	163	165	258
- physique	57	60	63
- chimie	115	108	139
- biologie	146	181	131
- géographie	73	68	55
- géologie	17	31	12
5. **Sciences médicales**			
- médecine	589	670	596
- sciences dentaires	274	222	100
- sciences pharmaceutiques	140	178	263
- médecine vétérinaire	82	96	104
- education physique	170	211	163
- kinésithérapie et réadaptation motrice	118	158	116
6. **Sciences appliquées**			
- ingénieur civil	442	496	581
7. **Sciences agronomiques**			
- ingénieur agronome	137	240	262
total	5 411	6 639	6 914

* A l'exclusion des formations postgraduées en informatique.

Chapitre 5

LES NOUVEAUX DIPLOMÉS DE L'ENSEIGNEMENT SUPÉRIEUR NON UNIVERSITAIRE

En Flandre, la majeure partie des diplômés de l'enseignement supérieur sont délivrés par les établissements d'enseignement supérieur non universitaire (ESNU). Les chiffres les plus récents concernent l'année de fin d'études 1988. On en retient que plus de 60 pour cent des diplômés de l'enseignement supérieur sont issus des formations de l'ESNU de type court, qui sont nettement orientées vers la profession. La part du marché de l'ESNU de niveau universitaire, le type long, a déjà atteint 12 pour cent. Les universités ne délivrent plus que 27 pour cent des diplômes de l'enseignement supérieur. Depuis le début des années 80, l'ESNU de type long a connu une croissance importante, par contre, l'ESNU de type court est en perte de vitesse.

Tableau 5.1 - **Evolution du nombre de nouveaux diplômés par type d'enseignement supérieur en Flandre**

Type d'enseignement supérieur	1980	%	1984	%	1988	%
enseignement universitaire	5 411	27.7	6 639	27.4	6 914	27.1
ESNU type long	1 688	8.6	2 387	9.8	3 075	12.0
ESNU type court	12 423	63.7	15 248	62.8	15 577	60.9
total	19 522	100.0	24 274	100.0	25 566	100.0

Dans l'ESNU, ce sont surtout les orientations à caractère technologique, les sections de langues et les orientations préparant aux emplois dans l'industrie qui connaissent une expansion remarquable.

Par contre, dans les secteurs de l'enseignement supérieur paramédical, social et pédagogique, le nombre de nouveaux diplômés a constamment diminué.

1. L'enseignement supérieur de type long

Dans l'ESNU de type long, où la formation présente un caractère plus pratique qu'à l'université et qui, en règle générale impose des conditions moins sévères, le plus grand nombre de diplômes a été délivré par les instituts supérieurs industriels. En 1988, le cap des 2 000 diplômes d'ingénieur industriel a été franchi. Par rapport à 1980, les 2 082 nouveaux ingénieurs industriels représentent une augmentation de près de 90 pour cent en huit ans. Dans la même période, le nombre de nouveaux diplômes d'ingénieur civil délivrés par les universités flamandes n'a augmenté que d'environ 30 pour cent.

Si l'on excepte la finalité agriculture (100 nouveaux diplômés en 1988) on peut dire qu'actuellement, en Flandre, on forme trois ingénieurs industriels pour un ingénieur civil. Pour un pays industrialisé, qui compte beaucoup de petites et moyennes entreprises, ce rapport des forces semble normal.

La position des ingénieurs sur le marché de l'emploi reste très favorable. L'évolution technologique et industrielle accélérée laisse prévoir qu'un besoin croissant d'ingénieurs industriels et civils continuera à se faire sentir.

La part des femmes dans le plus récent contingent d'ingénieurs industriels reste faible : à peine 15.4 pour cent. Cela signifie néanmoins un important accroissement. En 1980, la part d'ingénieurs féminins n'atteignait même pas 5.3 pour cent.

Les écoles supérieures économiques délivrent les diplômes de licencié en sciences commerciales et d'ingénieur commercial. Dans la pratique, il est impossible de délimiter le champ d'activité de ces diplômés par rapport à celui des licenciés en sciences économiques appliquées et des ingénieurs commerciaux des universités. Dans les facultés universitaires, la formation est plus caractérisée par la recherche scientifique relative à l'économie des entreprises, et les chiffres concernant la réussite en première année sont nettement moins élevés. Sur le marché de l'emploi, les diplômes sont dans une forte mesure interchangeables et la demande d'économistes et d'ingénieurs commerciaux des deux orientations continue à dépasser l'offre.

Les écoles supérieures économiques connaissent à peu près le même rythme de croissance que les facultés des sciences économiques dans les universités : un accroissement du nombre de nouveaux diplômés de plus de 80 pour cent en huit ans. Dans les universités, on délivre cependant deux fois plus de diplômes en économie. La part des femmes dans les récentes promotions des écoles supérieures économiques reste assez faible : seulement 31.6 pour cent en 1988.

Le nombre de diplômes de licencié délivrés par les instituts supérieurs de traducteurs et interprètes a plus que doublé en huit ans. Apparemment, cette évolution explosive s'est produite au détriment des facultés universitaires de philosophie et lettres, où le nombre de nouveaux licenciés diminue en permanence depuis le milieu des années 80.

Les connaissances linguistiques et la formation générale étendue des licenciés-traducteurs et interprètes ouvrent à ces diplômés de larges possibilités dans les entreprises.

Le champ d'activités spécifique des traducteurs et interprètes est encore assez modeste mais le diplôme offre une bonne base de départ pour un large éventail de fonctions dans le secteur privé. La plupart des licenciés-traducteurs et interprètes y commencent cependant en dessous de leur niveau de qualification.

De même que dans les facultés universitaires de philosophie et lettres, la présence des jeunes filles est très importante parmi les étudiants traducteurs et interprètes : plus de 70 pour cent des nouveaux diplômés sont des femmes.

Dans les instituts supérieurs d'architecture, on peut s'attendre, à moyen terme, à une forte diminution du nombre d'architectes nouvellement diplômés, après une évolution spectaculaire. En cinq ans, le nombre d'étudiants en première année d'architecture a diminué de presque 20 pour cent.

La diminution de la force d'attraction de l'architecture s'expliquait par la crise de la construction depuis le début des années 80. Le faible redressement de la construction de logements peut donner un nouvel élan à l'architecture. Remarquons que cette dernière attire deux fois plus de femmes que l'orientation d'ingénieur industriel : 30.1 pour cent.

L'enseignement supérieur maritime est une section nouvelle de l'ESNU de type long. Par la loi du 15 juillet 1985, la formation d'officier de pont à l'école supérieure de navigation à Anvers a été reprise dans le type long. Dès l'année académique 1985-86, les étudiants de cette école obtiennent le diplôme de licencié en sciences nautiques en même temps que le brevet de premier lieutenant au long cours. Deux diplômes de licencié seulement ont été délivrés pour cette première année, quatre diplômes pour l'année suivante et aucun en 1988. Au cours de ces mêmes années on a délivré respectivement 42, 34 et 37 diplômes d'aspirant-officier au long cours (le premier diplôme final après trois années d'études). Ici aussi, on constate une tendance à la baisse.

L'obtention du diplôme de licencié de l'enseignement maritime requiert 36 mois d'expérience maritime effective, liés à quatre années d'études. Pour cette raison, ces diplômes ne sont pas comparables aux autres diplômes de l'ESNU de type long et ils ne sont dès lors pas repris dans les présentes considérations.

2. L'enseignement supérieur de type court

L'enseignement supérieur de type court constitue un conglomérat important de formations orientées vers les professions. Il comprend une cinquantaine d'orientations bien profilées, ainsi que des options de spécialisation à l'intérieur de ces orientations. De 1977 à 1985, le nombre de nouveaux diplômés de l'ESNU de type court a constamment augmenté. Depuis 1986, le type court semble avoir dépassé le sommet et on ne constate plus que des glissements sectoriels importants.

Dans l'ESNU de type court la durée des études est généralement de trois ans. Dans l'enseignement supérieur économique, dix formations de graduat ont encore une durée de deux ans d'études. A part cela, il y a une seule formation technique de deux ans en topographie.

Une directive de la CE de 1988 prévoit que, dans le cadre de l'harmonisation des "formations professionnelles post-secondaires", la durée des études supérieures doit être de trois ans au moins. La prolongation d'un an de la durée des études pour les formations actuelles de deux ans sera réalisée en Flandre pour les étudiants qui entameront leurs études en 1990-91.

Jusqu'au milieu des années 80, les écoles normales délivraient la majeure partie des diplômes de l'ESNU de type court. Par suite de la forte diminution des débouchés dans l'enseignement, l'intérêt s'est porté progressivement sur les formations de graduat de l'enseignement supérieur économique. Cet enseignement est devenu le segment le plus fort et le plus expansif du type court. Cette forte expansion semble s'être produite au détriment du recrutement des écoles normales, mais aussi des écoles supérieures d'études sociales et des orientations paramédicales.

L'enseignement supérieur économique comprend treize orientations d'études, complétées en 1988-89 par les orientations finances, gestion de l'environnement et pratique du droit. Depuis le début des années 80, le nombre de gradués nouvellement diplômés a presque doublé. C'est de loin la plus forte croissance enregistrée dans l'ESNU de type court.

Les orientations gestion d'entreprise-comptabilité, secrétariat et langues, informatique et marketing, qui sont toutes très bien cotées, attirent de loin le plus grand nombre d'étudiants. Dans l'informatique, la population estudiantine est cependant en recul. Cela peut avoir un rapport avec la concurrence grandissante des informaticiens universitaires sur le marché de l'emploi.

Traditionnellement, la proportion des étudiantes dans les formations courtes de l'enseignement supérieur économique orientées vers les entreprises atteint un niveau assez élevé : environ 60 pour cent des jeunes diplômés. Le plus grand nombre de femmes sont issues proportionnellement de l'orientation secrétariat médical (97.2 pour cent), le nombre le moins important des orientations expédition, informatique et assurances (moins de 35 pour cent).

Dans l'enseignement supérieur pédagogique, à savoir les écoles normales, le nombre de nouveaux diplômés a constamment augmenté jusqu'au milieu des années 80. Peu après, on a connu un dépeuplement inquiétant : en cinq ans, les écoles normales ont perdu plus de 60 pour cent de leur population. Par le sérieux recul des nouveaux contingents, les chances de mise au travail dans l'enseignement ont fortement augmenté.

Après les formations paramédicales, les écoles normales ont fourni le plus grand nombre de diplômés. Près de 80 pour cent des jeunes enseignants de l'enseignement primaire sont des institutrices : parmi les jeunes enseignants de l'enseignement secondaire inférieur, on compte environ 70 pour cent de régentes. Pour l'enseignement préscolaire on ne comptait en 1988 que 28 hommes contre à peu près 900 nouvelles institutrices préscolaires.

Numériquement, l'enseignement supérieur paramédical occupe la troisième place dans l'ESNU de type court. Depuis le milieu des années 80, le nombre de nouveaux diplômés diminue constamment. La section de nursing, où l'on constate un inquiétant manque de gradués, a perdu en cinq ans plus d'un quart de ses étudiants de première année.

Dans toutes les orientations du secteur paramédical, sauf une (la kinésitherapie), plus de 80 pour cent des jeunes diplômés sont des femmes. Le nursing à lui seul totalise déjà plus de 60 pour cent des diplômés du secteur paramédical.

A l'opposé de la pénurie d'infirmiers(ères) il y a un excédent de kinésithérapeutes, de logopèdes (orthophonistes), de chimistes cliniques et de diététicien(ne)s, qui connaissent tous des difficultés à trouver un emploi. Par contre, pour les ergothérapeutes, les chances de trouver un emploi sont nettement améliorées.

Les diplômés de l'enseignement supérieur social cherchent surtout des débouchés dans le secteur non marchand qui est en majeure partie saturé par les restrictions budgétaires de ces dernières années. Un léger accroissement est cependant noté dans le secteur de l'aide sociale. Les assistants sociaux et les gradués en psychologie reçoivent une formation de base large et polyvalente qui, moyennant une faculté d'adaptation, peut certainement mener à un emploi dans les entreprises. De récentes mesures prises par les pouvoirs publics ont nettement élargi les débouchés pour les éducateurs et éducatrices (gradués en orthopédagogie) dans l'aide spécialisée aux jeunes et aux handicapés : on y connaît déjà une importante pénurie de personnel qualifié.

Comme dans toutes les orientations préparant à des fonctions dans les secteurs des soins et de l'aide sociale, la proportion des diplômées parmi les assistants sociaux est très élevée : 70 pour cent des jeunes diplômés de l'enseignement supérieur social sont des femmes.

L'enseignement supérieur technique est un secteur très expansif qui recrute ses étudiants surtout dans l'enseignement secondaire technique. Au niveau du graduat, il comprend une dizaine de formations professionnelles qui couvrent divers domaines technologiques. La plupart des diplômés se destinent à des emplois dans le secteur industriel, où ils occupent une position intermédiaire entre le technicien de l'enseignement secondaire et l'ingénieur. La demande de ce genre de diplômés continue à dépasser largement l'offre.

La présence d'étudiantes dans ces orientations - comme d'ailleurs dans les orientations industrielles de l'enseignement secondaire technique - reste très faible. En 1988 par exemple, les proportions suivantes de diplômées ont été enregistrées : mécanique et electronique : moins de 1 pour cent : construction : 12.3 pour cent. Ce n'est que dans les orientations de chimie et de textile qu'on compte environ autant de femmes que d'hommes parmi les diplômés. L'enseignement supérieur agricole ne compte que deux orientations : architecture des jardins et du paysage et agriculture et horticulture. Cette dernière orientation n'a été reconnue qu'en 1987-88. Par rapport à 1982 (année de pointe), le nombre de nouveaux diplômés en architecture des jardins et du paysage a diminué de moitié en six ans. Le premier contingent de diplômés de la nouvelle orientation agriculture et horticulture est plus nombreux que la plus récente promotion d'architectes des jardins et du paysage. Dans les deux

orientations, les femmes représentent en moyenne un cinquième du nombre des nouveaux diplômés.

L'enseignement supérieur artistique ne connaît qu'une seule orientation numériquement importante : l'architecture d'intérieur. Ici aussi se dessine une tendance à la diminution de la population estudiantine, qui va de pair avec les faibles possibilités sur le marché de l'emploi.

Comme dans toutes les orientations du domaine culturel, les femmes y sont fortement représentées : environ 60 pour cent des nouveaux architectes d'intérieur sont des femmes.

L'enseignement artistique supérieur comprend l'enseignement supérieur de la musique, des arts plastiques et des arts dramatiques. Le ministère de l'education n'a pas publié de chiffres pour l'enseignement artistique.

Dans l'ESNU de type court, les jeunes filles occupent nettement une position majoritaire : à peu près 65 pour cent des jeunes diplômés sont des femmes. Si l'on ne tient pas compte des orientations industrielles de l'enseignement supérieur technique et de l'enseignement supérieur agricole, la proportion des diplômées atteint même 70 pour cent. Elles sont encore concentrées dans les sections qui s'orientent vers les segments suivants du secteur des services : l'enseignement, les soins de santé et l'aide sociale. Dans ces secteurs, on ne peut cependant plus s'attendre, à moyen terme, à une importante expansion de l'emploi.

Traditionnellement, les jeunes filles hésitent à choisir des orientations destinées aux emplois dans le secteur industriel et technique. L'influence de récentes campagnes de promotion destinées aux futures étudiantes se fait sans doute déjà sentir dans le choix des études mais, dans l'ensemble, cette influence s'avère encore trop faible. Il faut toutefois reconnaître que, surtout dans les milieux industriels, les chefs d'entreprise sont souvent assez réticents en ce qui concerne le recrutement de cadres féminins.

Le recrutement et la formation professionnelle de cadres féminins sont encore très souvent considérés comme un investissement qui comporte des risques pour l'entreprise. La disponibilité à la mobilité géographique de la femme mariée soulève des questions et l'opposition entre la tâche familiale de la mère et les exigences d'une carrière ambitieuse reste une matière controversée dans les milieux industriels. On observe toutefois une lente modification des mentalités. Les femmes qui veulent monter dans la hiérarchie des entreprises doivent en tout cas dépasser en dynamisme leurs collègues masculins. Il y a lieu de souligner enfin la fréquence des activités professionnelles à temps partiel dans le type d'emploi des jeunes femmes. Dans de nombreux cas, il s'agit sans doute d'un choix volontaire. La grande majorité des jeunes femmes préfèrent cependant un emploi à temps plein.

Tableau 5.2 - **Evolution du nombre de nouveaux diplômés de l'ESNU de type long par filière, en Flandre**

Filières	1980	1984	1988	différence en % entre 1980 et 1988
ingénieur industriel	1 117	1 461	2 082	+ 86.4
architecte	149	214	143	- 4.0
sciences commerciales	248	393	449	+ 81.0
traducteur-interprète	174	319	401	+ 130.5
total	1 688	2 387	3 075	+ 82.2

Source : Ministère de l'enseignement flamand.
Service des statistiques d'enseignement.

Tableau 5.3 - **Evolution du nombre de nouveaux diplômés de l'ESNU de type court par secteur, en Flandre**

secteurs de l'enseignement supérieur	1980	1984	1988	différence en % entre 1980 et 1988
technique	919	1 251	1 742	+ 89.6
agricole	95	93	147	+ 54.7
economique	3 110	4 357	6 168	+ 98.3
paramédical	2 708	3 064	2 531	- 6.5
social	825	1 016	987	+ 19.6
artistique	299	294	234	- 21.7
pédagogique	4 467	5 173	3 768	- 15.6
total	12 423	15 248	15 577	+ 25.4

Source : Ministère de l'enseignement flamand.
SErvice des statistiques d'enseignement.

Tableau 5.4 - **Evolution du nombre de nouveaux diplômés de l'enseignement supérieur non universitaire, par orientation d'études en Flandre**

Orientations d'études	1980	1984	1988
Formations de niveau universitaire			
- ingénieur industriel	1 117	1 461	2 082
- architecte	149	214	143
- sciences commerciales (licencié ; ingénieur commercial)	248	393	449
- interprète ; traducteur (licencié)	174	319	401
total	1 688	2 387	3 075
Formations de type court			
1. enseignement supérieur technique			
- construction	101	80	73
- chimie	264	279	365
- electro- mécanique	237	488	661
- electronique	141	192	324
- arts visuels (photo, film)	65	55	67
- entreprises graphiques	36	43	115
- textile	17	76	
- topographie	75	97	46
- confection (1)	-	-	-
- bois	-	-	15
- technologie (1)	-	-	-
2. enseignement supérieur agricole			
- architecture des jardins et du pays	95	93	62
- agriculture et horticulture	-	-	85
3. enseignement supérieur économique			
- gestion d'entreprise ; comptabilité	865	1 078	1 801
- marketing	307	260	499
- expédition	52	64	146
- assurances	28	47	95
- secrétariat et langues	883	1 189	1 636
- secrétariat médical	163	193	217
- informatique	525	1 154	1 004
- relations publiques - accueil	161	20	37
- communication appliquée	-	207	358
- tourisme	94	99	156
- hôtellerie	32	46	118
- finances (2)	-	-	-
- administration de l'environnement (2)	-	-	-
- pratique du droit	-	-	101

Tableau 5.4 - Evolution du nombre de nouveaux diplômés de l'enseignement (suite) supérieur non universitaire, par orientation d'études en Flandre

Orientations d'études	1980	1984	1988
4. enseignement supérieur paramédical			
- nursing	1 672	1 822	1 584
- kinésithérapie	316	435	306
- ergothérapie	161	218	123
- logopédie	137	143	128
- diététique	99	128	90
- chimie clinique	300	286	256
- techn. pharmaceut. et biologiques	23	32	44
5. enseignement supérieur social			
- assistant social ; conseiller social	646	754	715
- psychologie	62	68	70
- education physique	19	22	17
6. enseignement supérieur artistique (3)			
- assistant d'architecte	33	18	21
- architecture d'intérieur	173	168	118
- arts plastiques (3)	48	68	44
- radio-film-télévision	34	27	34
- techniques de diffusion	11	13	17
7. enseignement supérieur pédagogique			
- instituteur (trice) préscolaire	355	866	904
- instituteur (trice) primaire	1 434	1 593	1 224
- agrégé ens. sec. inférieur	2 015	1 961	1 133
- agrégé ens. sec. inférieur techn.	663	753	507
total type court	12 423	15 248	15 577

Source : Ministère de l'enseignement flamand.
Service des statistiques d'enseignement.

(1) nouvelles filières à partir de 1987-88

(2) nouvelles filières à partir de 1988-89

(3) enseignement artistique supérieur (musique, arts plastiques et dramatique) non inclus.

Tableau 5.5 - **Nouveaux diplômés de l'enseignement supérieur non universitaire, en Flandre, par orientation et par sexe (1988)**

Orientations d'études	hommes	femmes	total	% femmes
Formations de niveau universitaire				
- ingénieur industriel	1 762	320	2 082	15.4
- architecte	100	43	143	30.1
- sciences commerciales (licencié; ingénieur commercial)	307	142	449	31.6
- interprète ; traduct. (lic.)	110	291	401	72.6
total	2 279	796	3 075	25.9
Formations de type court				
1. enseignement supérieur technique				
- construction	64	9	73	12.3
- chimie	189	176	365	48.2
- (electro) mécanique	656	5	661	0.8
- electronique	322	2	324	0.6
- arts visuels (photo; film)	55	12	67	17.9
- entreprises graphiques	69	46	115	40.0
- textile	36	40	76	52.6
- topographie	32	14	46	30.4
- confection (1)	-	-	-	-
- bois	15	-	15	-
- technologie (1)	-	-	-	-
2. enseignement supérieur agricole				
- architecture des jardins et du paysage	47	15	62	24.2
- agriculture et horticulture	71	14	85	16.5
3. enseignement supérieur économique				
- gestion d'entreprises, comptabilité	902	899	1 801	49.9
- marketing	274	225	499	45.1
- expédition	95	51	146	34.9
- assurances	64	31	95	32.6
- secrétariat et langues	284	1 352	1 636	82.6
- secrétariat médical	6	211	217	97.2
- informatique	656	348	1 004	34.7
- relations publiques - accueil	4	33	37	89.2
- communication appliquée	115	243	358	67.9
- tourisme	27	129	156	82.7
- hôtellerie	70	48	118	40.7
- finances (2)	-	-	-	-
- gestion de l'environnement	-	-	-	-
- pratique du droit	7	94	101	93.1

Tableau 5.5 - **Nouveaux diplômés de l'enseignement supérieur non universitaire en Flandre** (suite)

Orientations d'études	hommes	femmes	total	% femmes
4. enseignement supérieur paramédical				
- nursing	277	1 307	1 584	82.5
- kinésithérapie	115	191	306	62.4
- ergothérapie	21	102	123	82.9
- logopédie	5	123	128	96.1
- diététique	14	76	90	84.4
- chimie clinique	42	214	256	83.6
- techn. pharmaceut. et biolog.	15	29	44	65.9
5. enseignement supérieur social				
- assistant social ; conseiller social	240	475	715	66.4
- psychologie	19	51	70	72.9
- orthopédagogie	37	148	185	80.0
- education physique	-	17	17	100.0
6. enseignement supérieur artistique				
- assistant d'architecte	14	7	21	33.3
- architecture d'intérieur	47	71	118	60.2
- arts plastiques (3)	24	20	44	45.5
- radio-film-télévision	21	13	34	38.2
- techniques de diffusion	12	5	17	29.4
7. enseignement supérieur pédagogique				
- instituteur (trice) préscolaire	28	876	904	96.9
- instituteur (trice) primaire	293	931	1 224	76.1
- agrégé ens. sec. inférieur	332	801	1 133	70.7
- agrégé ens. sec. technique	105	402	507	79.3
total type court	5 721	9 856	15 577	63.3

Source : Ministère de l'enseignement flamand.
Service des statistiques d'enseignement.

(1) nouvelles filières à partir de 1987-88

(2) nouvelles filières à partir de 1988-89

(3) enseignement artistique supérieur (musique, arts plastiques et dramatique) non inclus.

Chapitre 6

GLISSEMENTS QUANTITATIFS SUR LE MARCHE DE L'EMPLOI POUR LES DIPLOMÉS UNIVERSITAIRES

La part du secteur de l'enseignement dans l'emploi d'universitaires est réduite de moitié.

Depuis la seconde moitié des années soixante, le profil de l'emploi des jeunes diplômés universitaires présente des glissements constants et profonds. Dans les années soixante, l'enseignement leur offrait encore le plus grand nombre de débouchés : à cette époque, un jeune universitaire sur trois trouvait un emploi dans l'enseignement. Actuellement, cette proportion n'est déjà plus que la moitié. Jadis, seulement un jeune diplômé universitaire sur cinq entamait une carrière dans les entreprises du secteur privé. Actuellement, les entreprises offrent de loin le plus grand nombre de débouchés pour les diplômés universitaires : environ 40 pour cent y trouvent actuellement un emploi. Cela ressort des enquêtes sur l'emploi menées par la *Rijksuniversiteit Gent* (RU Gent) depuis le début des années 70. On peut admettre que ces glissements sont assez représentatifs pour les jeunes universitaires. La plus récente enquête sur l'emploi menée par l'Université gantoise, la quatrième de la série, concerne 4 093 nouveaux diplômés de la période 1982-86. Elle montre leur situation sur le marché de l'emploi au milieu de l'année 1987. Ces diplômés étaient confrontés avec un marché de l'emploi marqué par un affaiblissement conjoncturel constant depuis le milieu des années 70. La première enquête a été menée parmi les diplômés universitaires des années 1964 à 1970. Ces diplômés trouvaient un milieu de travail dans un climat de forte expansion économique et n'avaient pas encore de réelles difficultés à trouver des débouchés.

Au bas du tableau 6.1 on peut constater les glissements importants entre les secteurs de l'emploi depuis la seconde moitié des années 60. Pour la plupart des diplômés, il s'agit d'un premier emploi en début de carrière.

L'enseignement secondaire et l'enseignement supérieur non universitaire, constituaient, dans les années 60, le champ de travail de loin le plus important pour les jeunes diplômés universitaires. A cette époque, le secteur de l'enseignement absorbait encore un tiers des nouveaux diplômés. Maintenant, cette proportion est à peu près réduite de moitié. La plus grande proportion de professeurs se trouve actuellement dans l'éducation physique (36.7 pour cent), la philosophie et lettres (35.7 pour cent) et les sciences (28.8 pour cent). Par rapport aux années 60, ces chiffres représentent une baisse de plus de moitié pour chacune de ces orientations. Cette réduction importante du nombre d'enseignants s'explique d'abord par la diminution constante du nombre d'étudiants, par suite de la dénatalité. En outre, le malaise actuel dans l'enseignement et sa perte de prestige ont sans doute fortement entamé la force d'attraction de la profession d'enseignant.

Dans les années 60, l'université et la recherche scientifique recrutaient environ 18 pour cent des jeunes diplômés universitaires. Cette proportion est tombée entre temps à 12 pour cent. Dans les sciences exactes, la proportion du personnel scientifique est encore assez élevée : 31 pour cent dans la faculté des sciences, environ 18 pour cent en sciences agronomiques et environ 16 pour cent pour les ingénieurs civils. Ces chiffres sont cependant nettement inférieurs à ceux des années 60 ; dans les sciences agronomiques, ils n'atteignent plus que la moitié.

Ce cadre de travail comprend d'abord les fonctions du cadre scientifique à l'université (assistants et chefs de travaux). En outre, les mandats scientifiques, offerts par les fonds scientifiques, permettent à un certain nombre de diplômés de s'engager pour une courte période dans la recherche.

Par le freinage de l'expansion des cadres scientifiques dans les universités, sous la pression des restrictions budgétaires, l'accès au domaine de la recherche devient de plus en plus difficile pour les jeunes. L'effectif du cadre scientifique est d'abord lié au volume de la population estudiantine.

La tendance à la stagnation de la population universitaire au cours des années 80 a, de toute évidence, donné lieu à un blocage des débouchés au niveau de la recherche. La règle des "40-60", qui n'offre qu'à 40 pour cent des membres du personnel scientifique des universités la perspective d'une nomination à titre définitif, a sans aucun doute contribué à combattre le vieillissement des cadres scientifiques. Cette mesure a toutefois dissipé les illusions de bon nombre de scientifiques, qui espéraient une carrière universitaire.

Actuellement, les services publics n'attirent que 12.6 pour cent des jeunes diplômés universitaires. Ce qui frappe le plus, c'est qu'ils n'engagent que très peu de jeunes universitaires. Depuis le blocage sélectif des recrutements en 1982, qui a suivi l'accroissement effréné des personnels des services publics au cours des années 70, l'expansion du secteur public a été considérablement freinée. Des pourcentages assez élevés sont à noter pour les diplômés en droit (22.2 pour cent), en ce qui concerne la présence dans les services publics.

Le nombre étonnamment élevé de recrutements de diplômés de certaines filières par les administrations publiques ne s'explique que par les engagements temporaires dans le cadre des mesures spéciales de résorption du chômage : stages de jeunes de l'Office national de l'emploi, mise au travail de chômeurs par les pouvoirs publics, cadre spécial temporaire (C.S.T.), troisième circuit du travail (T.C.T.) dans le secteur non marchand, agents contractuels subventionnés (A.C.S.) dans les administrations locales.

L'importance de ces sous-statuts donne une idée fausse de l'emploi. Les engagements temporaires sous statut précaire augmentent pour les filières universitaires qui n'offrent que des possibilités limitées sur le marché de l'emploi. Cet aspect de la mise au travail n'a pas été analysé dans le rapport de l'Université de Gand.

Les résultats d'une enquête plus récente de la *Katholieke Universiteit Leuven* (Université Catholique de Louvain) permettent toutefois de mesurer l'ampleur actuelle de cette insertion professionnelle sous statut précaire (voir plus loin).

Dix-huit mois après leur sortie de l'université, environ 6 pour cent des jeunes diplômés échappent au chômage par une intégration temporaire dans ces statuts précaires. Des proportions particulièrement élevées sont enregistrées pour les sciences politiques et sociales (26.8 pour cent), la criminologie (17.1 pour cent) et les sciences de la culture (11 pour cent).

près de 40 pour cent des jeunes universitaires entament leur carrière dans les entreprises privées. ce pourcentage a presque doublé en moins de 20 ans. c'est surtout pour les ingénieurs et les économistes que les entreprises représentent un champ d'activité important. le pourcentage est de 73.4 pour les ingénieurs civils, 62.1 pour les ingénieurs agronomes, 71.1 pour les économistes. l'emploi dans les entreprises dépend largement de la conjoncture. la relance de l'économie depuis 1985 a eu une influence sensible sur le volume de l'emploi des universitaires dans le monde des affaires.

les professions libérales comportent tout d'abord le barreau, le notariat et les stages au barreau et dans le notariat. le pourcentage d'indépendants dans la mise au travail des juristes est revenu de 55 à 33.7 depuis les années 60. de nombreux stagiaires s'orientent pendant ou après leur stage vers d'autres débouchés, surtout vers les entreprises. qui occupent actuellement déjà 41 pour cent des jeunes juristes.

les professions libérales sont aussi traditionnellement le champ d'activité le plus important des médecins, dentistes et vétérinaires. là aussi, le pourcentage des indépendants a fortement diminué au profit de l'emploi dans le secteur des services.

la loi d'accès à la profession a fortement modifié le profil professionnel pour les pharmaciens. dans les années 60, 45 pour cent des pharmaciens commençaient leur carrière comme titulaire d'une officine. actuellement, ils ne sont plus que 24 pour cent. les trois-quarts des jeunes pharmaciens travaillent comme salariés dans une officine, dans la recherche et dans l'industrie pharmaceutique.

les transformations dans l'emploi des jeunes universitaires sont reprises au tableau 6.1 ci-après. les transformations par filière figurent au tableau 6.2.

Tableau 6.1 - **Modifications dans l'emploi des jeunes universitaires (en pourcentage)**

Diplômés en : Secteurs d'emploi	1964 1970	1971 1973	1976 1978	1982 1986
Enseignement secondaire ou supérieur non universitaire	34.1	29.8	26.0	16.5
Université et recherche scientifique	17.9	15.3	13.9	12.3
Services publics	9.7	10.3	9.0	12.6
Secteur privé	22.1	24.4	26.7	39.9
Travail indépendant	16.2	20.2	24.4	18.7
Totaux :	100.0	100.0	100.0	100.0
Chiffres absolus :	3 875	2 517	1 889	3 389

Source : Enquêtes sur l'emploi, Rijksuniversiteit Gent, 1990.

Tableau 6.2 - **Secteur d'emploi par orientation (en pourcentage)**

Orientation	Enseign.	Univ.+ recherche	Secteur public	Secteur privé	Indép.
Philosophie et Lettres	35.7	5.0	18.4	38.8	2.1
Droit	0.6	2.5	22.2	41.0	33.7
Criminologie	11.6	-	78.4	6.7	3.3
Sciences pol. & sociales	5.1	3.1	40.8	46.9	4.1
Sciences économiques	12.1	7.4	7.4	71.1	2.1
Sciences psycho. pédag.	39.9	4.7	28.7	25.7	1.0
Sciences	28.8	31.0	9.7	29.2	1.3
Médecine	2.0	29.2	15.8	2.0	51.0
Sciences dentaires	-	0.8	0.8	1.7	96.7
Pharmacie	-	9.1	9.1	57.8	24.0
Médecine vétér.	2.1	6.8	10.8	20.9	59.4
Education physique	36.7	1.4	22.5	32.4	7.0
Ingénieur civil	1.2	16.4	5.3	73.4	3.7
Ingénieur agronome	7.1	17.9	10.4	62.1	2.5
Moyenne université	16.5	12.3	12.6	39.9	18.7

Source : Enquêtes sur l'emploi, Rijksuniversiteit Gent, 1990.

Près d'un universitaire sur sept commence sa carrière à un niveau inférieur

Le chômage, mais aussi l'emploi à temps partiel, l'emploi temporaire et l'emploi à un niveau inférieur à la qualification sont des indicateurs importants des débouchés sur le marché du travail. Ces données figurent également dans l'enquête sur l'emploi en 1987 du Centre d'orientation des études de la *R.U. Gent* Ces données n'ont qu'une valeur relative parce qu'elles figurent au rapport comme des moyennes pour ceux qui sont diplômés depuis un à cinq ans.

La mobilité professionnelle est très grande pendant les cinq premières années après l'université. Le taux de chômage diffère fortement selon le nombre d'années écoulées depuis l'obtention du diplôme. Toutefois, les moyennes sont des indicateurs qui permettent une comparaison des orientations (cf. tableau 6.3).

Il ressort de cette comparaison que ce sont surtout les diplômés en philosophie et lettres, sciences politiques et sociales, sciences psychologiques, en sciences et en éducation physique qui éprouvent d'importantes difficultés à accéder au marché du travail, alors que les économistes et les ingénieurs civils ne rencontrent pas d'obstacles notables. Le taux moyen de chômage est de 6.5 pour cent pour les universitaires qui ont été diplômés depuis un à cinq ans. Le taux de chômage est de 8.7 pour cent pour les sciences politiques et sociales et de 14.2 pour cent pour les sciences psychologiques et pédagogiques, alors qu'il ne dépasse guère 1 pour cent pour les ingénieurs civils, les économistes et les juristes.

En moyenne, 12.2 pour cent des jeunes universitaires n'ont trouvé qu'un emploi à temps partiel. Dans les cinq orientations qui présentent des difficultés, le taux d'emploi à temps partiel varie entre 10.4 pour cent pour les sciences politiques et sociales et 31.9 pour cent pour l'éducation physique, alors qu'il n'atteint que 2.1 pour cent pour les ingénieurs et les économistes.

42.1 pour cent des jeunes diplômés ont un contrat temporaire et n'ont donc pas d'emploi permanent. Une fois de plus, les pourcentages les plus élevés sont enregistrés dans les cinq orientations qui rencontrent des problèmes de débouchés : l'emploi temporaire varie entre 35.4 en sciences politiques et sociales et 71.0 en Sciences. Il ne concerne qu'un quart, en moyenne, des ingénieurs civils et des économistes. Une indication très claire des difficultés est fournie par l'emploi sous-qualifié : 13.4 pour cent des jeunes diplômés estiment que leur activité professionnelle est manifestement inférieure à leur niveau de qualification et ne requiert pas vraiment une formation universitaire. Cette évaluation personnelle de la sous-utilisation du diplôme est évidemment très subjective mais c'est à nouveau dans les mêmes orientations que le pourcentage de sous-qualification est particulièrement élevé. Ce pourcentage varie entre 15.2 pour les sciences et 32.9 pour la philosophie et lettres. En criminologie également, la sous-qualification est importante (24.6 pour cent), alors qu'elle n'atteint que 1.4 pour cent pour les ingénieurs civils et 5.3 pour cent pour les économistes. La sous-qualification ressort également du niveau de rémunération. L'emploi pour un salaire inférieur

aux prévisions atteint 22.9 pour cent. Les pourcentages les plus élevés sont une fois de plus enregistrés dans les cinq orientations susvisées. Le pourcentage d'universitaires sous-rémunérés varie entre 20 pour cent pour les Sciences et 37.3 pour cent pour l'Education physique. La plus forte fréquence de sous-rémunération se retrouve toutefois en Criminologie (40 pour cent).

Le remplacement de débouchés traditionnels, par exemple dans l'enseignement, par des emplois dans les entreprises ou dans le secteur non marchand donne souvent lieu à un statut précaire, caractérisé par un emploi temporaire ou à temps partiel, et surtout à une sous-qualification ou sous-rémunération. Cette situation n'est pas nécessairement permanente, mais est fréquente pour un premier emploi

Les chiffres de l'emploi de licenciés en philosophie et lettres ou en sciences sont des moyennes, qui ne reflètent pas la situation dans chaque orientation. On sait que les perspectives sont assez favorables pour les romanistes, les mathématiciens, les physiciens, les chimistes et les informaticiens, par rapport à d'autres orientations de ces deux facultés, où l'on rencontre souvent des excédents sur le marché du travail.

Le rapport ne fournit pas de ventilation par sexe, qui permettrait une comparaison de la situation des diplômés et des diplômées. Quatre jeunes diplômés sur dix estiment qu'il y a discrimination envers les diplômées lors du recrutement. Quelle est la situation à cet égard dans les différents secteurs? L'enquête sur l'emploi fournit des renseignements utiles sur l'interchangeabilité des diplômes et sur l'intérêt de formations complémentaires.

La dissociation entre le diplôme et la profession est favorisée par le fait que certains diplômes sont interchangeables dans certains milieux professionnels. Parmi les jeunes universitaires, 16.5 pour cent estiment que, pour l'emploi occupé un autre diplôme pourrait se substituer au leur ; pour 13.3 pour cent le diplôme obtenu pourrait être remplacé par une formation de l'ESNU, et pour 6.8 pour cent par un autre diplôme. En ce qui concerne la substitution d'autres diplômes, les orientations suivantes sont, assez normalement, les mieux placées : sciences politiques et sociales (36.2 pour cent), sciences économiques (30.1 pour cent), agronomie (27.4 pour cent), sciences (24.7 pour cent) et droit (21.7 pour cent).

Ces formations sont larges et polyvalentes et offrent toutes une gamme de débouchés professionnels (tableau 6.4).

Actuellement, 30 pour cent des jeunes universitaires ont suivi une formation post-universitaire pour augmenter leurs chances sur le marché du travail. Ces postgraduats et autres études complémentaires sont surtout suivis par des juristes (42.3 pour cent), des économistes (39.5 pour cent), des licenciés en sciences politiques et sociales (34.3 pour cent) : 65 pour cent des jeunes médecins suivent une formation de spécialiste ou ont obtenu leur diplôme après l'une ou l'autre spécialisation complémentaire.

Il faut noter le peu d'intérêt pour l'agrégation, qui donne accès à l'enseignement, dans des orientations qui traditionnellement étaient orientées vers celui-ci. Le pourcentage le plus élevé de diplômes d'agrégé se retrouve en éducation physique (61.1). En philosophie et lettres et en sciences, le

pourcentage d'agrégés n'atteint plus que 44.6 et 33.6, respectivement. Plus de la moitié de ces diplômés ne s'intéressent donc pas à une carrière d'enseignant (cf. tableau 6.5).

L'enquête révèle l'opinion des jeunes universitaires quant aux éléments qui ont déterminé leur recrutement. Dans les trois orientations dont les diplômés trouvent le plus souvent un emploi dans une entreprise (ingénieurs civils, agronomes, économistes), ce sont, dans l'ordre : la connaissance des langues, la mention du diplôme (distinction, grande distinction), l'expérience professionnelle, le diplôme complémentaire. La connaissance des langues semble être l'atout le plus important : 60 pour cent de ces diplômés en font état ; 30 à 40 pour cent citent l'expérience et un quart seulement le diplôme complémentaire.

Quant à l'efficacité des différentes filières pour trouver un emploi adéquat, l'ordre d'importance, selon des jeunes universitaires, est le suivant :

- les relations personnelles et familiales (44 pour cent du groupe) ;
- les annonces publiées pour demander du personnel (28.1 pour cent) ;
- l'intervention du personnel de l'université (19.8 pour cent) ;
- les relations politiques (14.4 pour cent) ;
- les services de placement de l'université (4.8 pour cent).

Les relations politiques n'ont sans doute une importance que pour les sous-statuts dans les services publics. L'importance des relations familiales et personnelles peut étonner, mais ressortait déjà de l'enquête d'un sociologue louvaniste, le professeur Luc Huyse, en 1976.

Tableau 6.3 - **Indicateurs des difficultés en matière de débouchés par orientations (en pourcentage)**

Orientation	Indicateurs				
	Taux de chômage	Emploi partiel	Emploi temporaire	Emploi sous-qualifié	Rémunération inférieure
- Philosophie et lettres	11.7	27.0	57.5	32.9	31.1
- Droit	1.0	5.3	31.7	4.1	29.9
- Criminologie	3.2	6.6	9.8	24.6	40.0
- Sciences politiques et sociales	8.7	10.4	35.4	18.6	24.7
- Sciences écon.	1.1	2.1	24.6	5.3	5.3
- Sciences psychol. et pédagogiques	14.2	22.3	51.2	21.9	34.2
- Sciences	9.5	15.4	71.0	15.2	20.0
- Médecine	-	2.8	45.3	0.8	29.9
- Sciences dentaires	-	5.9	3.4	0.9	17.7
- Pharmacie	3.3	10.9	19.2	0.8	20.2
- Médecine vétérinaire	2.0	3.5	16.4	3.5	25.7
- Educ. physique	10.1	31.9	57.4	25.4	37.3
- Ingénieur civil	1.2	2.1	26.6	1.4	7.6
- Ingénieur agronome	6.3	5.9	41.8	10.3	10.8
Moyenne université	6.5	12.2	42.1	13.4	22.9

Source : Enquêtes sur l'emploi, Rijksuniversiteit Gent, 1990

Tableau 6.4 - **Interchangeabilité des fonctions par orientation (en pourcentage)**

Orientation	Formation pouvant être remplacée par			
	un autre dipl. universitaire	un diplôme de l'ESNU	d'autres formations	Total
- Philosophie et lettres	11.0	20.8	18.8	50.6
- Droit	21.7	7.7	2.3	31.7
- Criminologie	5.0	25.0	28.3	58.3
- Sciences politiques et sociales	36.2	20.2	14.9	71.3
- Sciences économiques	30.1	6.6	2.2	38.9
- Sciences psychologiques et pédagogiques	18.9	17.8	9.8	46.5
- Sciences	24.7	9.4	5.3	39.4
- Médecine	3.4	-	-	3.4
- Sciences dentaires	-	-	-	-
- Pharmacie	10.1	-	-	10.1
- Médecine vétérinaire	5.6	2.0	-	7.6
- Education physique	4.2	47.9	7.1	59.2
- Ingénieur civil	17.1	15.1	-	32.2
- Ingenieur agronome	27.4	17.4	0.9	45.7
Moyenne université	16.5	13.3	6.8	36.6

Source : Enquêtes sur l'emploi, Rijksuniversiteit Gent, 1990

Tableau 6.5 - **Formations complémentaires par orientation (en pourcentage)**

Orientation	Agrégation E.S.S. (*)	Formation post-universitaire
- Philosophie et lettres	44.6	24.6
- Droit	4.2	42.3
- Criminologie	13.2	11.8
- Sciences politiques et sociales	11.7	34.3
- Sciences économiques	15.2	39.5
- Sciences psychologiques et pédagogiques	27.5	11.4
- Sciences	33.6	35.4
- Médecine	-	65.0
- Sciences dentaires	-	5.8
- Pharmacie	2.2	29.9
- Médecine vétérinaire	-	14.4
- Education physique	61.1	28.9
- Ingénieur civil	2.3	33.8
- Ingénieur agronome	17.6	23.4
Moyenne université	21.0	30.0

Source : Enquête sur l'emploi "R.U. Gent", 1990.

**) L'agrégation ESS confère la capacité d'enseigner dans l'enseignement secondaire et dans l'ESNU.*

Entre temps, les résultats d'une enquête plus récente ont été publiés par le Service consultatif pour les études de l'Université catholique de Louvain (*Katholieke Universiteit Leuven*) (1). Cette étude concerne 3 769 diplômés des années académiques 1985-86 et 1986-87 dont le processus de transition entre l'université et la vie professionnelle a été examiné fin décembre 1988. Ces diplômés ont trouvé un emploi dans le climat de redressement économique de la fin des années 80.

Dans l'étude de Louvain, le développement de l'entrée sur le marché de l'emploi est examiné respectivement 6 et 18 mois après la sortie de l'université. C'est surtout la situation professionnelle après 18 mois qui est significatif. En effet, dans plusieurs cas, une année au moins s'écoule avant l'insertion professionnelle. Si on retient seulement la situation après 18 mois, on ne dispose dans le rapport de Louvain que de données statistiques

(1) *Dienst voor Studieadvies. Katholieke Universiteit Leuven : Intrede op de arbeidsmarkt van afgestudeerden van de K.U. Leuven 1985-86 en 1986-87*, Leuven, 1990.

concernant une seule cohorte de diplômés, celle de 1985-86. Du point de vue statistique, ces données sont moins significatives à cause des fluctuations dues au hasard. Les tendances sont, toutefois, sensiblement les mêmes que celles qui se manifestent dans l'étude de l'Université de Gand, malgré quelques variations.

Nous retenons seulement les signaux de difficultés quant à l'insertion professionnelle enregistrés 18 mois après la sortie de l'université.

Les indicateurs de tensions sur le marché de l'emploi sont en premier lieu, le taux de chômage, mais également la mise au travail temporaire sous statut précaire dans le cadre des mesures spéciales de résorption du chômage : les stages pour jeunes de l'Office national de l'emploi, la mise au travail de chômeurs dans les services publics et les ASBL, le cadre spécial temporaire (CST) dans le secteur social et culturel, le troisième circuit de travail (TCT) dans le secteur non marchand et le cadre des contractuels subventionnés dans certaines administrations locales. Enfin, le sous-emploi (under-employment), la mise au travail en dessous du niveau de qualification universitaire, la sous-rémunération et le travail partiel sont également des indices importants d'un marché de l'emploi sursaturé.

Les indicateurs de tensions sur le marché de l'emploi (moyennes enregistrées) sont les suivants :

	Diplômés de Louvain	Diplômés de Gand
- Taux de chômage	3.5	6.5
- Travail temporaire sous statut précaire	5.8	non enregistré
- Travail en dessous du niveau de qualification	8.8	13.4
- Sous rémunération	28.4	22.9
- Travail partiel	14.6	12.2

Ces moyennes couvrent cependant des proportions fort divergentes selon la filière. Ainsi qu'il apparaît dans les tableaux VI.6 et VI.7 ci-après, les indicateurs de tensions ou d'une position solide sur le marché de l'emploi sont surtout concentrés dans certaines filières.

Tableau 6.6 - **Indicateurs de tensions sur le marché de l'emploi enregistrés pour les filières avec une position faible sur le marché de l'emploi (en pourcentage)**

Filières	Taux de chômage	Statut précaire	Sous-qualifié	Sous-rémunéré	Travail partiel
- Sciences politiques et sociales	12.2	26.8	19.5	38.9	20.0
- Criminologie	5.7	17.1	27.9	51.5	6.1
- Philosophie et Lettres	7.2	11.0	20.4	53.2	33.3
- Education physique	-	12.5	18.4	58.8	41.2
- Ingénieur agronome	12.9	12.9	4.9	18.5	3.4

Tableau 6.7 - **Indicateurs de tensions sur le marché de l'emploi enregistrés pour les filières avec une position forte sur le marché de l'emploi (en pourcentages)**

Filières	Taux de chômage	Statut précaire	Sous-qualifié	Sous-rémunéré	Travail partiel
- Sciences pharmaceutiques	-	-	-	13.6	8.7
- Ingénieur civil	1.9	1.9	2.7	12.6	3.9
- Sciences économiques	2.4	1.2	4.2	10.8	5.5
- Droit	1.8	1.8	2.7	46.2	3.8
- Ingénieur chimiste et industr. agricoles	6.2	12.5	4.2	7.1	-

Source: Service consultatif pour les études. Université Catholique de Louvain (K.U. Leuven).

Chapitre 7

PERSPECTIVES PROFESSIONNELLES PAR FILIÈRE UNIVERSITAIRE

1. Sciences religieuses

Les sciences religieuses ont connu un essor remarquable avant 1980. Depuis le début des années 80, la tendance s'est inversée et le nombre de diplômés continue à diminuer. Presque 90 pour cent des licenciés en sciences religieuses enseignent la religion. En dehors de l'enseignement, c'est le niveau de formation universitaire qui est valorisé plutôt que la compétence dans leur domaine d'étude spécifique.

2. Sciences de la culture

A la fin des années 60, 80 pour cent des licenciés en philosophie et lettres travaillaient encore dans l'enseignement. A court terme, les débouchés dans l'enseignement sont limités en raison de la baisse de la natalité et des modestes besoins de remplacement du corps enseignant.

Par le recul du nombre de nouveaux diplômés dans les sciences de la culture, les débouchés dans le secteur de l'enseignement ont sans doute augmenté. De nombreux jeunes enseignants n'ont cependant que des charges à temps partiel, parfois réparties entre plusieurs écoles. Le délai d'attente pour les nominations à titre définitif reste fâcheusement long et, par le jeu des dispositions en matière de réaffectation des enseignants sans emploi, l'avenir reste incertain dans les écoles. Ceci crée nécessairement un malaise. Le syndrôme de *burn-out* (surtout la démotivation) parmi les enseignants réduit évidemment la force d'attraction d'un emploi dans l'enseignement.

Un nombre toujours croissant des jeunes diplômés en philosophie et lettres cherchent des débouchés en dehors du secteur traditionnel de l'enseignement. Pour plusieurs filières, orientées traditionnellement vers un emploi dans l'enseignement, la vie des affaires constitue actuellement un débouché plus important. Presque 40 pour cent des diplômés issus de la faculté de philosophie et lettres commencent actuellement une carrière dans les entreprises du secteur privé.

3. Sciences humaines et sociales

Les études en droit permettent d'envisager de nombreuses orientations, mais de moins en moins de juristes trouvent un emploi dans leur domaine spécifique. Le secteur juridique traditionnel, qui comprend les avocats, les magistrats et les notaires, regroupe d'ores et déjà moins de la moitié de l'effectif total de juristes.

Un tiers des jeunes juristes commencent leur carrière comme avocats stagiaires au barreau. Avec un avocat stagiaire pour deux avocats en fonction, le point de saturation est, faut-il le dire, largement dépassé. Dans certaines villes il y a même presque autant de stagiaires que d'avocats inscrits "au tableau". Le stage de trois ans, qui n'est que peu ou pas rémunéré, ainsi que les frais et risques inhérents à l'installation d'une étude transforment dans bien des cas le stage en une voie de garage. Pendant ou après le stage, beaucoup de jeunes juristes se tournent vers les entreprises, le secteur public ou la magistrature.

Déjà 40 pour cent environ des jeunes licenciés en droit commencent une carrière dans les entreprises du secteur privé, soit comme juriste d'entreprise (conseiller juridique, conseiller fiscal, expert en assurances, expert en législation du travail et de la sécurité sociale), soit en tant que cadre ayant une qualification non juridique acquise par des études complémentaires ou une expérience professionnelle dans diverses fonctions administratives, commerciales, financières ou de gestion.

La proportion de juristes qui ont trouvé un emploi dans le secteur public dépasse actuellement 20 pour cent. La magistrature, toutefois, ne représente que 5 pour cent environ du nombre total de juristes.

Les applications de la criminologie se situent dans le domaine de la protection de la jeunesse, de la probation et du reclassement, des établissements pénitentiaires, de la police et des tribunaux de la jeunesse, de la police communale et judiciaire, etc.

Dans la pratique, les criminologues subissent cependant souvent la concurrence des juristes, des psychologues, des sociologues et des assistants sociaux. Les débouchés restent donc très modestes. En criminologie, on note un sous-emploi et des emplois temporaires particulièrement notables. Plus de 70 pour cent des jeunes criminologues sont occupés en dehors du champ d'application spécifique de la criminologie.

Les diplômés en sciences politiques et sociales n'ont pas de champ d'activité bien défini. Dans les trois débouchés importants, à savoir les services publics, les entreprises et le secteur non marchand, on ne fait souvent guère appel à leurs connaissances spécifiques. La plupart du temps, ils sont recrutés parce qu'ils ont une formation à caractère polyvalent de niveau universitaire et la spécialisation professionelle est acquise par l'expérience et l'étude personnelle. Dans les trois secteurs cités, qui occupent plus de 80 pour cent des jeunes diplômés, ceux-ci se heurtent dès lors à la concurrence d'autres diplômés en sciences humaines.

Par le vaste champ d'activité que couvrent les sciences économiques, ces formations offrent un très large éventail de débouchés : dans les entreprises, le secteur des services, les services publics, l'enseignement et la recherche scientifique.

Plus de 70 pour cent des nouveaux diplômés trouvent actuellement un emploi dans les entreprises du secteur privé. En dehors des tâches traditionnellement attribuées à des experts qui ont une formation économique, les diplômés en sciences économiques entrent également en considération pour quantité de fonctions qui n'exigent pas une compétence particulière. Le

caractère polyvalent de la formation élargit en effet les possibilités de débouchés.

Malgré une croissance spectaculaire, les débouchés pour les économistes et les ingénieurs commerciaux restent étendus, surtout dans les entreprises. Cette tendance est évidemment favorisée par le redressement économique de ces dernières années.

Comme dans les autres orientations des sciences humaines, l'embauche d'économistes et d'ingénieurs commerciaux a sensiblement augmenté dans les entreprises et fortement diminué dans le secteur public et l'enseignement. L'enseignement constitue un deuxième débouché important, mais n'attire qu'environ 12 pour cent des jeunes diplômés, surtout des femmes. Le secteur public ne représente plus que 7 pour cent environ des jeunes diplômés.

Les filières distinctes dans les domaines de la psychologie et des sciences de l'éducation préparent à des fonctions spécifiques, mais l'emploi apparaît souvent indifférent à la spécialisation suivie. La psychologie scolaire, l'enseignement, la recherche scientifique, l'aide aux handicapés, la santé mentale et l'aide spéciale à la jeunesse constituaient jadis les principaux champs d'activité. Dans ce domaine, les psychologues et les pédagogues sont, dans une large mesure, interchangeables. Par suite de la tendance à la saturation de ces débouchés, le profil des professions a été sérieusement modifié.

Le champ d'activité des psychologues et des pédagogues se situe encore pour un quart dans le secteur social, où le travail à caractère précaire, le travail à temps partiel, le travail temporaire et l'occupation en dessous du niveau de formation sont actuellement très fréquents. Seuls les psychologues dont la formation est orientée vers les entreprises trouvent encore facilement un emploi. Le secteur privé recrute actuellement environ un quart des diplômés en psychologie et en sciences de l'éducation et est devenu un débouché presqu'aussi important que l'enseignement. Environ 5 pour cent des diplômés trouvent un champ d'activité dans la recherche scientifique.

4. Sciences fondamentales

Pour moins de 30 pour cent des diplômés en sciences, les débouchés se situent encore dans l'enseignement. Ceci constitue un recul sensible. Les entreprises par contre recrutent actuellement déjà presque un tiers de ces diplômés. La recherche scientifique a pu employer jusqu'à présent un jeune chercheur sur trois ; le plus souvent avec des contrats d'une durée limitée.

Pour ce qui concerne les perspectives dans l'enseignement, il faut tenir compte, comme pour les sciences de la culture, de trois facteurs importants qui auront une incidence sur la demande d'enseignants : la diminution continuelle du nombre d'élèves dans le secondaire, les besoins de remplacement limités à court terme dans le corps enseignant et les mesures de rationalisation frappant l'enseignement.

Le ralentissement du recrutement dans la recherche scientifique est extrêmement défavorable pour les diplômés en sciences. Le recrutement dans le secteur privé par contre est en pleine expansion. Dans les entreprises, les scientifiques subissent, pour les fonctions à caractère exécutif, la concurrence

des ingénieurs industriels issus de l'enseignement technique supérieur de type long, tandis que pour les fonctions de direction, la préférence est accordée aux ingénieurs civils. La recherche scientifique appliquée des entreprises multinationales se fait en outre bien souvent dans les pays d'origine de ces entreprises.

La formation scientifique, acquise par l'étude des sciences exactes, permet également des applications en dehors de la discipline spécifique. Cela garantit une bonne flexibilité dans la vie professionnelle.

Les perspectives d'emploi restent favorables pour les mathématiciens, les informaticiens, les physiciens et les chimistes. Parmi les biologistes, les géographes et les géologues, dont les débouchés sont restreints, on constate par contre des tensions non négligeables en ce qui concerne l'insertion professionnelle.

5. Sciences médicales

Le taux d'occupation médicale, exprimé par le nombre d'habitants par médecin, est à présent un des plus élevés d'Europe occidentale. La Belgique compte presque un médecin pour 300 habitants. Les facultés belges délivrent actuellement en moyenne environ un millier de diplômes par an (à des Belges) mais le nombre de médecins qui cessent d'exercer est environ cinq fois moins élevé.

Le volume des prestations médicales ne progresse pas par rapport au nombre de praticiens et on observe un glissement de la médecine générale vers la médecine spécialisée plus onéreuse. Cela se traduit par un chômage déguisé et une baisse sensible du revenu moyen, surtout pour de jeunes généralistes.

Par la tendance à la féminisation du corps médical, on rencontre dans la pratique médicale de plus en plus d'emplois à temps partiel, ce qui augmente les chances de trouver un emploi.

Les jeunes médecins qui ont une activité non curative représentent déjà une fraction non négligeable de l'emploi : environ 6 pour cent. Il s'agit de médecins qui exercent dans la médecine préventive, la médecine du travail, le contrôle médical et les services publics.

Une pléthore existe également en sciences dentaires. La Belgique compte actuellement un dentiste pour environ 1 500 habitants. D'une manière générale, il est en effet admis qu'au stade actuel de la science dentaire, un rapport d'un dentiste pour 2 000 habitants est souhaitable. Cet objectif est donc déjà largement dépassé.

Plus de 95 pour cent des jeunes dentistes sont indépendants. En moyenne, seulement 2 à 3 pour cent des jeunes diplômés travaillent dans un cabinet dentaire en vertu d'un contrat de travail.

Environ 80 pour cent des jeunes pharmaciens belges travaillent dans une officine pharmaceutique. Actuellement, la Belgique compte une pharmacie pour 1 900 habitants. Comparativement à d'autres pays de la Communauté européenne, la superficie couverte par officine est particulièrement réduite.

La majorité des jeunes pharmaciens, plus de 60 pour cent, ne sont pas titulaires d'une pharmacie et travaillent dans une officine comme gérant, pharmacien adjoint ou remplaçant. Les jeunes pharmaciens qui sont appointés dans une officine sont souvent sous-payés.

De nouveaux, mais modestes débouchés se sont développés dans les pharmacies d'hôpitaux, la pharmacie industrielle et la biologie clinique. Ces débouchés sont cependant proches du point de saturation.

En raison du développement pléthorique du nombre d'étudiants en médecine vétérinaire depuis le milieu des années 60, le corps des médecins vétérinaires a pratiquement doublé en quinze ans. L'afflux de diplômés dans une profession qui n'offre que peu ou pas de possibilités d'expansion soulève un certain nombre de questions.

En se fondant sur le nombre d'étudiants actuellement inscrits aux facultés de médecine vétérinaire, l'offre annuelle prévue de nouveaux diplômés sera trois fois plus élevée que l'estimation la plus optimiste quant au nombre de nouveaux diplômés qui peuvent être mis au travail chaque année. A court terme, il devrait en résulter d'importants excédents de médecins vétérinaires.

En moyenne, près de 60 pour cent des jeunes vétérinaires cherchent à s'établir dans une profession indépendante où il y a sursaturation.

Les débouchés des licenciés en éducation physique se situaient dans le passé pour plus de 80 pour cent dans l'enseignement. Le vif intérêt à cette discipline avec ses débouchés professionnels forcément limités a toutefois entraîné une saturation des débouchés professionnels dans le secteur de l'enseignement. Actuellement, moins de 40 pour cent environ des jeunes diplômés commencent encore une carrière dans l'enseignement. Un tiers des jeunes licenciés en éducation physique a découvert des débouchés dans les entreprises du secteur privé.

Les diplômés universitaires en kinésithérapie (licenciés) et les gradués en kinésithérapie de l'enseignement supérieur paramédical opèrent sur le même terrain professionnel.

Avec une densité de un kinésithérapeute pour environ 700 habitants (un record européen) la pratique professionnelle est manifestement sursaturée. La structure d'âge étant jeune, les besoins de remplacement sont en outre très limités. La majorité des kinésithérapeutes, environ 60 pour cent, ont une activité indépendante, où le chômage déguisé émerge de manière croissante.

6. Sciences de l'ingénieur

En Belgique, le diplôme d'ingénieur civil est délivré par la faculté des sciences appliquées. Les sciences appliquées couvrent les différentes applications technologiques des sciences exactes. La formation d'ingénieur civil est dès lors axée sur un large éventail de possibilités dans la vie professionnelle.

Dans les universités belges la formation de base d'ingénieur civil peut être orientée vers une quinzaine de spécialisations. Par leur vaste formation

technique et scientifique, les ingénieurs civils ne sont pas liés dans leur vie professionnelle à leur spécialisation. Grâce à cette vaste formation, ils sont au contraire polyvalents et ils ont pu acquérir une méthode de pensée et de travail rationnelle qui peut également être valorisée en dehors du domaine strictement technologique.

Le principal débouché des ingénieurs civils se situe dans le secteur privé, qui occupe actuellement plus de 70 pour cent des jeunes ingénieurs. Seulement 5 pour cent environ des jeunes ingénieurs sont recrutés par différents services publics. Cela représente déjà une réduction de moitié par rapport aux années 60. La recherche scientifique appliquée dans les laboratoires universitaires occupe environ 16 pour cent des jeunes ingénieurs.

La Belgique continue à connaître une pénurie prononcée d'ingénieurs universitaires.

7. Sciences agronomiques

La formation universitaire en sciences agronomiques englobe la chimie, la biologie et la technologie et est axée sur une valorisation optimale de la biosphère. Cette vaste formation de base ouvre de nombreuses voies aux ingénieurs en sciences agronomiques et leur donne accès à de multiples domaines d'activité. La majorité des nouveaux diplômés travaillent actuellement en dehors de la production agricole.

Les études en sciences agronomiques peuvent être orientées vers une des disciplines suivantes : ingénieur agronome (qui porte plutôt sur la production agricole) ou ingénieur chimiste et des industries agricoles (qui concerne plutôt l'industrie).

En moyenne, un jeune agronome sur cinq est ingénieur chimiste et des industries agricoles ; les autres sont ingénieurs agronomes. Il n'est pas possible de délimiter les débouchés des ingénieurs agronomes d'une part, et des ingénieurs chimistes et des industries agricoles, d'autre part.

Les ingénieurs issus de la faculté des sciences agronomiques trouvent principalement des débouchés dans le secteur industriel (plus de 60 pour cent), dans le secteur scientifique (près de 20 pour cent) et dans les services publics (environ 10 pour cent). Proportionnellement, les ingénieurs agronomes sont nettement plus représentés dans les services publics, mais surtout dans la coopération au développement. Pour les ingénieurs chimistes et des industries agricoles, par contre, la recherche scientifique et les entreprises industrielles restent de loin les principaux débouchés. Pour cette dernière catégorie d'ingénieurs, le marché de l'emploi se présente de loin mieux que pour les ingénieurs agronomes pour lesquels une tendance à la saturation se dessine.

Chapitre 8

MODIFICATIONS QUALITATIVES INTERVENUES SUR LE MARCHÉ DE L'EMPLOI DES DIPLOMÉS UNIVERSITAIRES

L'enseignement universitaire en Flandre, comme dans toute l'Europe occidentale, a connu un développement extrêmement rapide pendant les vingt-cinq dernières années, passant d'un enseignement réservé à une élite à un enseignement de masse. L'arrêt (provisoire ?) de cette vive expansion se concrétise surtout dans l'évolution du nombre de diplômes délivrés entre 1965 et1988. En moins d'un quart de siècle, le nombre annuel de nouveaux diplômés a presque quadruplé. Cette vague de nouveaux diplômés a évidemment causé des modifications importantes dans l'emploi des jeunes universitaires.

L'accroissement a surtout été spectaculaire dans le groupe des sciences humaines et sociales et en agronomie. En sciences économiques, le contingent annuel de nouveaux diplômés a été multiplié par dix de 1965 à 1988 ; en sciences psychologiques et pédagogiques et en sciences politiques et sociales, il a été multiplié par cinq, en droit par six. Le nombre annuel de nouveaux ingénieurs agronomes a été multiplié par sept. Pour les ingénieurs civils, on n'a noté qu'une augmentation de 160 pour cent : le nombre de ces diplômés n'a même pas triplé.

L'afflux de jeunes universitaires s'est heurté à la conjoncture sur le marché du travail. Après la forte demande d'universitaires dans les années 60, la récession du milieu des années 70 a réduit la demande, tout comme l'arrêt du recrutement dans les services publics dès le début des années 80. La meilleure conjoncture du milieu des années 80 stimule à nouveau le recrutement d'universitaires par les entreprises.

Le développement rapide des sciences et de la technologie confère une complexité et une technicité accrues aux tâches inhérentes à l'emploi, ce qui a entraîné une "académisation" plus prononcée de la vie professionnelle.

Le problème des débouchés a donné lieu à son tour, à une plus forte professionnalisation de la formation universitaire, de sorte que les diplômés sont mieux préparés aux besoins concrets du marché actuel du travail. Ce nouveau profil de l'université se manifeste aussi dans la création d'orientations qui relèvent plutôt de l'ESNU.

Les développements du marché universitaire du travail depuis vingt-cinq ans font apparaître clairement plusieurs glissements importants, notamment :

1. la dissociation de la formation et de la profession ;
2. le relèvement des conditions en matière de diplôme ;
3. la mobilité professionnelle ;
4. la surqualification accrue ;
5. la diminution de la valeur professionnelle du diplôme ;
6. l'érosion accélérée des connaissances ;
7. la féminisation du marché du travail.

Nous passons en revue ces diverses tendances.

1. La dissociation de la formation et de la profession

La saturation des débouchés traditionnels pour les universitaires, notamment l'enseignement, le barreau et les services publics, incite un nombre croissant de jeunes diplômés à chercher d'autres voies et à se tourner vers des milieux professionnels auxquels l'orientation suivie ne prépare pas directement. Ils exercent une profession en marge de leur formation.

Les employeurs s'intéressent à ces diplômés, non pour leur spécialisation, mais surtout pour leur niveau de formation, qui sert de base à une qualification poussée pendant leur travail. C'est notamment le cas des germanistes qui s'intéressent aux affaires et qui, dotés d'une grande capacité d'adaptation, cherchent dans les entreprises des débouchés qui traditionnellement ne prolongent pas leur formation (secrétariat de direction, relations publiques, exportations, promotion de ventes, marketing, banques..).

Cet essaimage est inévitable pour la plupart des orientations qui sont axées sur une carrière dans des secteurs tels que l'enseignement et le secteur public qui n'offrent plus guère de possibilités d'emploi.

La dissociation du diplôme et de la profession résulte du fait que la demande d'éléments hautement qualifiés s'adresse en fait à deux catégories différentes : les spécialistes et les généralistes. Pour les premiers, la spécialisation est essentielle pour la profession : c'est le cas des avocats, dentistes et informaticiens.

Les généralistes ne sont pas recrutés pour leur spécialisation, mais pour leur formation générale : dans ce groupe, les formations sont souvent interchangeables : on n'exerce pas la profession pour laquelle on a étudié.

L'interchangeabilité de formations universitaires pour des emplois où la qualification requise se base sur le niveau de formation, les études complémentaires, l'étude personnelle et les aptitudes sociales, n'est pas un phénomène nouveau. Elle est traditionnelle pour les germanistes, juristes, économistes, ingénieurs. Plus de la moitié des juristes dans le secteur privé ont un emploi qui ne requiert guère de formation juridique. Plus de la moitié des ingénieurs ont une activité qui ne prolonge pas une formation technologique. Antérieurement, 90 pour cent des germanistes trouvaient à s'employer dans l'enseignement : maintenant, ils cherchent plutôt dans les entreprises ou les médias.

2. Relèvement des conditions en matière de diplôme

Le besoin croissant de connaissances intensives dans la vie professionnelle et l'offre croissante de diplômes donnent lieu à ce relèvement pour un nombre croissant d'activités professionnelles.

Ce relèvement est favorisé par la complexité croissante des fonctions. L'automatisation, la robotisation, l'informatisation, les technologies nouvelles et les activités professionnelles à prépondérance intellectuelle ont pour effet de poser pour un nombre croissant de fonctions des exigences plus élevées en matière de formation. Dans une société fortement industrialisée, le besoin de diplômés de l'enseignement supérieur va croissant.

Un exemple classique de relèvement est fourni par les professions d'huissier de justice et de secrétaire communal qu'on confie de plus en plus souvent à des juristes. Dans les banques, deux débutants sur trois ont un diplôme d'enseignement supérieur. Par le passé, plus de la moitié des nouveaux employés commençaient leur carrière dans une banque, munis tout au plus d'un diplôme d'enseignement secondaire.

On estime que plus de la moitié des nouveaux emplois qui seront créés dans la dernière décennie du siècle seront réservés à des diplômés de l'enseignement supérieur, et au moins un tiers à des universitaires.

Ce relèvement des conditions de diplôme se constate pour nombre de fonctions d'exécution qui ne requièrent pas vraiment de formation universitaire. C'est le cas pour des fonctions d'exécution du secteur des banques et des assurances, de fonctions technico-commerciales, de fonctions de secrétariat d'un certain niveau, qui ne constituaient pas des débouchés traditionnels pour les universitaires. De nombreuses professions sont progressivement considérées comme le domaine des universitaires. Cette "académisation" refoule progressivement les détenteurs d'un diplôme de moindre niveau de leur champ d'activité traditionnel. Ce refoulement fait subir aux diplômés des formations supérieures de type court, orientées vers la pratique, une concurrence croissante des universitaires en matière de niveau de travail et de rémunération. Les diplômés de l'enseignement supérieur de type court exercent à leur tour une pression sur le marché du travail des diplômés de l'enseignement secondaire.

Ainsi, le chômage se répercute sur les niveaux de formation moins élevés. Cela explique pourquoi les diplômés de l'enseignement supérieur sont proportionnellement peu représentés dans les chiffres du chômage.

Ce refoulement est favorisé par l'offre massive de diplômés de l'enseignement supérieur sur le marché de l'emploi et, d'autre part, par la démocratisation de l'accès aux études supérieures.

La plupart des diplômés de l'enseignement secondaire général s'orientent vers l'enseignement supérieur, ce qui provoque une diminution sensible du niveau moyen des diplômés du secondaire qui passent immédiatement à la vie professionnelle. Pour les entreprises, c'est une incitation à préférer les diplômés de l'enseignement supérieur pour les fonctions d'exécution intéressantes, où l'on occupait précédemment des diplômés du secondaire.

Par ailleurs, des expériences négatives peuvent inciter les chefs d'entreprises à freiner l'engagement de personnel surqualifié. Ces travailleurs sont trop peu motivés, souvent frustrés et évidemment moins stables parce qu'ils ne considèrent leur travail que comme un emplacement de stationnement. En outre, le recrutement de surqualifiés peut provoquer des tensions dans une entreprise parce qu'il fait obstacle aux promotions internes de diplômés d'un niveau moins élevé, mais ayant acquis une expérience professionnelle. Ce frein au recrutement de surqualifiés n'existe pas dans le secteur public, où le nombre de ces candidats ne fait qu'augmenter.

3. Mobilité professionnelle accrue

L'évolution technologique a toujours causé un déplacement des travailleurs vers d'autres activités professionnelles : pensons au glissement de l'emploi du secteur primaire (agricole) au secondaire (industriel) et de celui-ci au tertiaire (services). Près de 70 pour cent des actifs travaillent dans le secteur des services, en pleine expansion. La nature des changements dans le monde du travail est plus radicale et leur rythme s'accélère, réduisant le délai d'adaptation.

Personne n'est sûr d'exercer le même métier pendant toute sa vie. Dire que les jeunes qui accèdent au marché de l'emploi devront changer trois fois de métier est peut-être une boutade, mais elle a un fond de vérité. Celui qui ne change pas de métier voit la nature de son emploi se modifier. Les diplômés de l'enseignement supérieur doivent donc faire preuve d'une grande mobilité professionnelle dans une situation qui évolue rapidement.

Un des changements le plus marquant des dernières décennies est l'accroissement de la mobilité professionnelle, des changements d'emploi pour rechercher des perspectives plus attrayantes, dans le chef des jeunes diplômés. On peut constater en même temps une modification importante du contenu de la fonction. Cette mobilité se remarque surtout chez les juristes qui passent, pendant ou après leur stage au barreau, à un emploi dans une entreprise ou un service public, chez les économistes et les ingénieurs.

Un nombre croissant de jeunes diplômés qui commencent leur carrière dans l'enseignement - le plus souvent dans un emploi temporaire - réalisent assez vite que l'enseignement n'ouvre que peu de perspectives et sont à la recherche d'un emploi plus stable et mieux rémunéré dans le secteur privé.

Un jeune diplômé sur trois qui ont trouvé une activité professionnnelle, est à la recherche d'un autre emploi. Par leur travail, ils acquièrent une expérience professionnelle qui peut être valorisée dans un emploi suivant.

Dans une Europe sans frontières, il faut souligner la nécessité d'une propension à la mobilité géographique. L'internationalisation de l'économie rend les carrières transfrontalières inévitables. Deux entreprises européennes sur trois étudient une forme de coopération avec des entreprises d'autres pays de la C.E. Cette mobilité est souvent freinée par le travail du conjoint, surtout dans l'enseignement.

4. Surqualification croissante

Le diplôme universitaire n'est plus rare : l'offre massive d'universitaires sur le marché de l'emploi en oblige beaucoup à se contenter d'un emploi pour lequel, selon les critères actuels, ils sont surqualifiés et qui ne requiert pas de formation supérieure.

Les enquêtes récentes, effectuées parmi les jeunes diplômés, démontrent que la surqualification, l'emploi inférieur au niveau de formation, atteint les pourcentages repris aux tableaux 6.3, 6.6 et 6.7.

Ces chiffres d'emploi inférieur à la qualification doivent toutefois être relativisés. On constate assez généralement que les jeunes universitaires entament leur carrière avec trop d'ambitions, alors qu'ils ne peuvent exercer qu'à terme des fonctions supérieures, à un niveau de responsabilité. Cela leur donne souvent le sentiment d'être sous-employé, alors qu'il s'agit d'une situation normale en début de carrière. C'est ainsi qu'en haute conjoncture, un jeune ingénieur civil sur cinq estime qu'il travaille en dessous du niveau d'un ingénieur universitaire.

Le problème de la mise au travail des légions de nouveaux diplômés de l'enseignement supérieur n'est pas celui d'un accroissement du chômage des universitaires, mais celui d'un accroissement du sous-emploi, du travail de qualification inférieure. Cette situation professionnelle n'est pas permanente, mais pour un nombre croissant de diplômés elle n'est plus rare en début de carrière.

5. Diminution de la valeur professionnelle du diplôme

L'avalanche de diplômes ramène souvent l'université à un prolongement de l'école secondaire. Il n'y a pas de fétichisme du diplôme dans les entreprises : la valeur professionnelle de celui-ci est relativisée.

Antérieurement, le diplôme universitaire était un point final. Dans la société actuelle, il n'est qu'un point de départ, une carte d'accès à une compétition dans laquelle la connaissance des langues, un second diplôme, les aptitudes sociales, l'aptitude à innover, l'acceptation d'une mobilité géographique, une forte flexibilité et les possibilités de se perfectionner sont déterminants pour l'embauche.

Les aptitudes sociales les plus appréciées dans l'entreprise sont le sens des responsabilités, le talent d'organisation, la faculté de prendre des décisions, le travail autonome, le travail en équipe, la communication, les contacts, la motivation. On n'acquiert pas ces aptitudes dans les auditoires universitaires. Elles sont développées par le travail pendant les vacances, l'activité de moniteur d'un mouvement jeunesse ou de volontaire dans le secteur non marchand, des stages dans les entreprises, la formation de candidat-officier de réserve pendant le service militaire.

Ces activités interviennent dans la sélection des candidats dans le secteur privé.

6. Erosion accélérée des connaissances

Tout change de plus en plus vite. Le développement accéléré des sciences, des technologies et de la société laisse les diplômés de l'enseignement supérieur désarmés pour une carrière complète. Les connaissances acquises à l'université dans le domaine des sciences exactes et médicales sont dépassées pour la moitié après dix ans à peine.

Toutes les disciplines connaissent une explosion de l'information. Les sciences et les techniques enseignées hier ne sont plus utilisables demain. De nouvelles professions apparaissent, cependant que les anciennes disparaissent ou changent de contenu.

Le contenu des fonctions est de plus en plus diversifié : tous les travailleurs sont confrontés avec des travaux auxquels ne les préparait pas leur formation.

Nos universités doivent former les diplômés à des professions qui restent à créer. Une spécialisation poussée de la formation de base est donc prématurée. La formation professionnelle (*Ausbildung*) commence de plus en plus au seuil de la carrière, et le rôle de l'université est limité *de facto* à la formation (*Bildung*). L'importance d'études complémentaires, en interaction avec l'expérience pratique, augmente. Un phénomène assez récent dans les universités est l'intérêt des jeunes diplômés pour une formation complémentaire. Cet intérêt n'est pas tellement scientifique, mais est surtout inspiré par le besoin d'une meilleure compétitivité sur le marché du travail.

L'attitude des entreprises à l'égard de ces postgraduats est ambivalente : la moitié des entreprises estiment qu'ils augmentent la valeur professionnelle des candidats ; les autres ne tiennent pas compte d'une spécialisation post-universitaire pour définir le profil professionnel souhaité.

7. Féminisation du marché de l'emploi

En 1965, 18.6 pour cent des nouveaux diplômés universitaires en Flandre étaient des femmes. En moins de vingt-cinq ans ce pourcentage a plus que doublé (43.4). L'accroissement du nombre de jeunes filles en première candidature permet de prévoir le pourcentage de diplômées vers 1995.

L'accès au marché du travail se fait sans problème pour les diplômées universitaires dans l'enseignement, les services publics, le barreau, la magistrature, les soins de santé et le secteur social. Il faut tenir compte de la dure loi de la sociologue française Evelyne Sullerot : "Une profession qui se féminise est une profession qui se détériore". L'accroissement du pourcentage de femmes dans le secteur professionnel est souvent un indicateur de la perte de prestige de ces professions.

Dans le secteur privé, les femmes trouvent plus difficilement à se placer. C'est surtout dans l'industrie que les chefs d'entreprises sont réticents à engager des diplômées. On constate cependant une lente modification des mentalités dans les entreprises.

Il faut enfin souligner la fréquence du travail à temps partiel des jeunes femmes. Dans certains cas, il s'agit sans doute d'un choix conscient. La grande majorité des jeunes femmes préfèrent pourtant le plein temps.

La conclusions de ce tour d'horizon est claire. Le diplôme universitaire reste un excellent atout sur le marché du travail. Dans les chiffres de chômage, les universitaires restent manifestement sous-représentés et la dénatalité fait encore reculer le chômage des jeunes. La part des universitaires parmi les actifs augmente constamment. Toutefois, le seul diplôme n'est plus un indice de qualité pour le jeune universitaire qui explore le marché du travail.

Chapitre 9

LE MARCHÉ DE L'EMPLOI POUR LES DIPLOMÉS DE L'ENSEIGNEMENT SUPÉRIEUR NON UNIVERSITAIRE

Aucune étude systématique n'a été entreprise en Belgique dans les années 80 relative au marché de l'emploi pour les diplômés de l'enseignement supérieur non universitaire (E.S.N.U.). Pour cette raison, ce rapport se limite à quelques considérations relatives aux perspectives professionnelles pour ces diplômés. Des données statistiques récentes manquent toutefois souvent.

LES FORMATIONS DE TYPE LONG

1. Ingénieur industriel

Pour les ingénieurs industriels, les entreprises offrent un débouché à environ trois diplômés sur quatre. Le secteur public n'engage par contre que 15 pour cent des diplômés et l'enseignement secondaire ou supérieur non universitaire presque 5 pour cent.

Dans la pratique, il est parfois difficile de délimiter avec précision le champ d'activité de l'ingénieur civil, diplômé de l'université, et celui de l'ingénieur industriel, formé par les écoles supérieures industrielles. En effet, il n'existe pas de directives formelles en la matière et dans l'industrie, où se situent les principaux débouchés de l'ingénieur, la corrélation entre formation et fonction est très imprécise. A chaque niveau, des personnes ayant reçu une formation très différente exercent souvent la même fonction. Des facteurs comme l'expérience professionnelle, l'étude personnelle, la connaissance des langues et surtout les qualités personnelles modifient en effet le rapport entre formation et capacité professionnelle.

2. Architecte

La plupart des architectes exercent encore leur profession en qualité d'indépendants. Un nombre croissant d'entre eux cherchent cependant à entrer dans des bureaux d'études, des bureaux d'architectes et des entreprises du bâtiment.

Beaucoup de jeunes architectes connaissent une situation de chômage déguisé. L'effet de l'évolution favorable de la conjoncture économique sur la construction ainsi que la régression du nombre de diplômés peuvent évidemment modifier cette situation.

3. Licenciés en sciences commerciales

Dans la pratique, les diplômés de l'université et ceux des écoles économiques supérieures sont dans une large mesure interchangeables dans les entreprises, dans le secteur public et dans l'enseignement secondaire.

Environ 60 pour cent de ces diplômés trouvent un débouché dans les entreprises du secteur privé ; presque 20 pour cent dans la fonction publique et environ 20 pour cent dans l'enseignement.

4. Licenciés-traducteurs et- interprètes

Environ 80 pour cent des licenciés-traducteurs et interprètes trouvent des débouchés dans les entreprises du secteur privé dans un large éventail de fonctions. La plupart de ces licenciés y commencent cependant en dessous de leur niveau de qualification.

LES FORMATIONS DE TYPE COURT

1. Enseignement supérieur technique

Ces formations professionnelles supérieures de type court (graduats industriels) couvrent plusieurs domaines de la technologie. Dans les domaines où il existe également une formation conduisant au diplôme d'ingénieur industriel, ces gradués ressentent de plus en plus la concurrence des ingénieurs. De ce fait, un nombre assez important de gradués sont employés en dessous de leur niveau de qualification dans des fonctions à caractère exécutif.

2. Enseignement supérieur agricole

La majorité des architectes des jardins et du paysage sont engagés dans les liens d'un contrat de travail comme concepteurs et surveillants de travaux à exécuter dans le cadre de plans de structures communaux, plans de paysage, plans verts, zones récréatives, parcs publics, etc. Un nombre assez restreint de ces diplômés sont établis comme concepteurs indépendants et ont créé leur propre bureau d'étude. Une saturation des débouchés se manifeste pour ces gradués.

Le graduat en agriculture et horticulture est une nouveauté dans l'enseignement supérieur agricole. L'accroissement de la productivité dans l'exploitation agricole et horticole par la rationalisation, la mécanisation poussée et l'introduction de nouvelles méthodes de culture exigent un plus haut niveau de formation des dirigeants de moyennes entreprises. La nouvelle formation répond à ce besoin.

3. Enseignement supérieur économique

L'enseignement supérieur économique de type court offre un large éventail de possibilités de formation essentiellement axées sur l'entreprise.

Le but est de former des cadres moyens hautement qualifiés sur le plan technique pour les grandes entreprises, des cadres pour les petites et moyennes entreprises ou de futurs dirigeants d'entreprises individuelles.

Dans la pratique professionnelle, les différentes filières, qui se défendent généralement bien sur le marché du trvail, se révèlent dans une large mesure interchangeables et il est bien difficile de délimiter les champs d'activité.

4. Enseignement supérieur paramédical

Pour les infirmiers et infirmières, les perspectives d'emploi sont excellentes.

La Belgique est confrontée à une pénurie prononcée d'infirmiers et d'infirmières pour diverses raisons : la diminution sensible du nombre d'étudiants dans l'enseignement supérieur paramédical, la durée moyenne plus courte de la carrière du personnel soignant féminin, la tendance à l'extension du travail à temps partiel dans la pratique infirmière, le vieillissement de la population, la complexité croissante des soins médicaux et le développement de la médecine préventive.

Des nouveaux diplômés kinésithérapeutes que compte la Belgique, les trois-quarts sont des gradués de l'enseignement supérieur médical et un quart seulement est diplômé universitaire. Les gradués et les licenciés en kinésithérapie travaillent toutefois sur le même terrain. Les gradués doivent affronter, sur le plan de l'emploi, les mêmes problèmes découlant de la pléthore des diplômes que les diplômés universitaires de cette discipline.

En théorie, les besoins en gradués en ergothérapie sont grands.Comme tout le secteur non marchand est frappé par des restrictions budgétaires sévères, il est toutefois difficile de prévoir dans quelle mesure ces besoins se traduiront par une demande accrue. La structure d'âge étant très jeune, il n'y a pas ou peu de besoins de remplacement dans ce groupe professionnel.

Le champ d'activité de la logopédie et de l'audiologie est vaste et il existe virtuellement d'énormes besoins dans ce domaine. Pourtant, les logopèdes et les audiologues n'occupent pas encore, dans le réseau des services médicaux-sociaux, la place à laquelle ils peuvent prétendre. Dans beaucoup de milieux, l'on connaît encore trop mal les services que peuvent rendre ces diplômés. Les mesures d'économie décidées dans le secteur des centres de réadaptation s'avèrent très défavorables pour ces diplômés.

En Belgique, la diététique est une science encore relativement jeune, de sorte que le diététicien est encore mal connu dans de nombreux milieux.

Quelques 60 pour cent seulement des diététiciens diplômés exercent une profession en rapport avec leur formation. Les possibilités d'emploi réelles sont en effet assez réduites. Un certain nombre de diplômés doivent encore se contenter d'activités professionnelles qui débordent en grande partie leur domaine spécifique. A cela s'ajoute que la profession de diététicien n'est pas protégée par la loi.

Environ 60 pour cent des gradués en chimie clinique travaillent dans les laboratoires cliniques d'hôpitaux et d'établissements de santé et environ 15 pour cent dans des laboratoires privés d'analyses médicales. Les assistants de laboratoire rencontrent des difficultés d'emploi sérieuses dans le secteur paramédical.

5. Enseignement supérieur social

Le champ d'activité des diplômés de l'enseignement supérieur social est très large et couvre des segments très divers du secteur non marchand. Dans la plupart des domaines de ce secteur, les diplômés des différentes filières sont souvent interchangeables.

Par l'afflux de diplômés de l'enseignement supérieur social dans le passé, la concurrence des diplômés issus d'autres filières de l'enseignement universitaire (sciences humaines et sociales) et les restrictions budgétaires, les perspectives d'emploi sont actuellement en fait très limitées.

6. Enseignement supérieur artistique

Le large éventail de possibilités d'études offertes par l'enseignement supérieur artistique ouvre bien entendu des débouchés divergents, en fonction de l'orientation artistique choisie. Les formations artistiques ne mènent généralement pas à des carrières bien définies. La plupart du temps, les diplômés s'imposent difficilement sur un marché de travail incertain. En l'occurence, la règle fondamentale selon laquelle le véritable talent perce toujours, est d'application.

7. Enseignement supérieur pédagogique

Les formations offertes par l'enseignement supérieur pédagogique sont en fait uniquement axées sur une carrière dans l'enseignement. Dans d'autres champs d'activité, les diplômés de l'enseignement supérieur pédagogique sont en concurrence avec les diplômés qui ont des compétences plus spécifiques. On note toutefois ces derniers temps un grand intérêt des établissements financiers pour les diplômés de l'enseignement normal. Les aptitudes communicatives et la connaissance des langues sont particulièrement prisées par ces sociétés.

La forte baisse du taux de natalité à partir de 1965, la structure d'âge relativement jeune du personnel enseignant et les mesures de rationalisation prises dans l'enseignement secondaire ont contribué à faire de l'enseignement le débouché le plus menacé par le chômage. Par la diminution sensible du nombre d'étudiants dans l'enseignement supérieur pédagogique, la situation difficile des diplômés de ce secteur de l'enseignement supérieur sur le marché du travail peut se retourner à moyen terme. D'ores et déjà une légère pénurie de diplômés de l'enseignement pédagogique se fait sentir. Ces mouvements sur le marché de l'emploi sont caractéristiques pour tout l'enseignement supérieur. Les pronostics relatifs à l'offre et la demande sont, pour cette raison, souvent des *self-destroying prophecies*.

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